





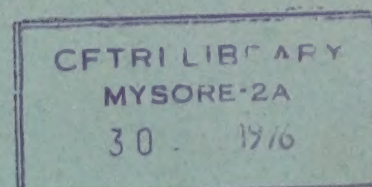






# Philippine Abstracts

CFTRI



A quarterly classified summary of the latest Philippine publication in the field of science and its applications (UDC 5 and 6)

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- Item no. 232, first line: title first and then the author Teodoro Gonzales
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- Item no. 238, second line of the entry: "*Reproter*" should read "*Reporter*"
- Item no. 240, second line of the entry: *try*, the last syllable of *Industry* should be before Third-Fourth Quarter
- Item no. 285, third line of second column should be moved to the first line as the continuation of the last line of the first column
- Item no. 286, first and second lines of second column should be moved after the entry of this item number
- Item no. 290, fifth line of entry: "*Proceedngs*" should read "*Proceedings*"; third line of the paragraph, "*condiions*" should read "*conditions*"; sixth line of the paragraph, "*proeins*" should read "*proteins*"







# PHILIPPINE ABSTRACTS

A quarterly classified summary of the latest Philippine publications in the field of science and its applications (UDC 5 and 6)

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## PHYSICS

535.853 539.172.3:539.2  
Spectrometers, Recording.  
Mössbauer effect.

**Mössbauer instrumentation using an electro-magnetic drive and a multichannel analyser.** Donato L. Guzman, Virginia B. Soriano and O. O. Navarro (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, pp.577-585. graphs, illus. 9 refs.

A constant acceleration Mössbauer spectrometer employing an electro-magnetic drive was built around a multichannel analyser. The drive system imparted an accurate and reproducible velocity to the source in synchronization with the detection system through the use of operational amplifiers, LV Syn and other solid state circuits.

539.172.3:512.831  
Mössbauer effect. Matrices.

**Modified iterative least squares fit for Mössbauer spectra.** Donato L. Guzman, Virginia B. Soriano, Vilma Umaly and O. O. Navarro (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.563-576. graphs, 1 ref.

An iterative least squares method for fitting experimental Mössbauer data to the theoretical curve was developed. Linearization procedure was used to make possible the setting up of linear equations which can be solved simultaneously. A polygonal approximation method to simplify the solution of equations involving larger than  $3 \times 3$  matrices is presented.

546.11:543.53  
Hydrogen — Analysis.

**Determination of hydrogen content in a liquid and solid sample by foil activation.** H. Ibarra and G. Gatchalian (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.253-267. graphs, tables, illus. 4 refs.

The activation of Cu foils by Cd-filtered reactor neutrons increases with the  $H_2$  content of the sample. This forms the basis of a non-destructive method for determining the amount of  $H_2$  in a liquid or solid sample. The sensitivity of the method is such that  $H_2$  content as low as 0.0006 g/c.c. of sample can be measured; with the use of dysprosium foil,  $H_2$  content of 0.0001 g/c.c. may be measured.

546.76:543.422  
Atomic spectra. Chromium.

**Solvent effects in the atomic absorption spectroscopy of chromium.** P. A. Kapauan and S. C. Diaz (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.551-561. graphs, tables. 6 refs.

Of the pure and mixed organic solvents studied,  $CH_3OH$  gave the highest sensitivity for chromium absorption in a combustion burner with a fuel rich  $H_2$ -air flame. In aqueous media,  $HClO_4$  solutions gave the highest absorption.

546.92:543.53  
Platinum — Analysis. Neutrons.

**Neutron activation analysis for iridium, palladium and silver in platinum.** L. G. Gilindro (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.539-549. flowsheet, graphs, table. 2 refs.



Thermal neutron activation analysis utilizing gamma-ray spectrometry was done in the analysis of platinum powder irradiated for 9-30 hrs with a thermal flux of  $ca. 3 \times 10^{13}$  neutrons/sq. cm/sec. The radiochemical separation scheme involved selective elution of the chloro complexes of the elements of interest through a strongly basic anion exchange resin column, followed by further decontamination. Average impurity contents of  $28 \pm 4.3$  ppb of Pd in 8 analyses,  $15 \pm 2.1$  ppb of Ir in 12 analyses and  $2.4 \pm 0.27$  p.p.m. of Ag in 6 analyses were obtained.

547.55:541.15

Aniline. Radiochemistry.

158. **The radiolysis of aniline.** O. S. Pascual and L. S. Bonoan. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.509-524. graphs, tables.

Gas chromatographic analyses of irradiated aniline samples revealed the presence of fulvene, benzene, pyridine, and the picoline and lutidine isomers. The presence and the amounts of the various products were dependent on the total dose of irradiation. The presence of pyridine and its methylated derivatives was suggested to have been formed from a rearrangement involving heterocyclic non-benzenoid aromatic intermediate, implying that the Huckel molecular orbital treatment of cyclic polyenes applies also to heterocyclic system where  $N_2$  is the hetero atom.

547.94:633.71:541.183.5

Nicotine. Adsorption.

159. **A comparison of nicotine adsorption on RICOR and activated alumina.** M. R. Eugenio, L. S. Bonoan and P. C. Roceles (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.241-252. graph, tables.

The study made use of nicotine extract from tobacco leaves dissolved in  $CCl_4$ . Results showed that the adsorptive capacity of Reactor-Irradiated coconut or corn oil resin (RICOR) for nicotine was approximately twice that of activated alumina.

**GEOLOGY. METEOROLOGY**

550.341

Earthquakes.

160. **Preliminary report on increased thermal activity and frequent earthquakes at Naujan, Mindoro Oriental.** Olimpio Pena and Romeo Landicho (Volcanologists, Philippine Commission on Volcanology, Quezon City). *Comvol Letter*, May-June 1969, v.3, no.3, p.3-4.

Observations in the area revealed the following: 1) the bubbling activity was caused by the rising of gas through the pool water; 2) no change in activity and no sulfide gas were noted in the thermal area; and 3) the quakes that rocked Lake Naujan was tectonic in nature. The possibility of volcanic activity in the area cannot be ignored and that renewed activity is always present. The installation of seismograph is highly recommended.

550.8:622.271

Quarries and quarrying.

161. **Quarry site surveys in relation to country planning.** Asher Shadmon (United Nations Marble Development Adviser, Bureau of Mines, Manila). *Journal of the Geological Society of the Philippines*, June 1969, v.23, no.2, p.98-112. charts, illus.

Quarry siting subscribes to country planning restrictions. Close liaison between the quarry planner and the geologist is essential. Geological factors to be considered in quarrying are: (1) geography, (2) local geology, (3) physical and chemical properties of rocks, (and 4) profitable workability of the quarry products.

551.234:536.5

Water, Underground — Thermal.  
Hot springs.

162. **Geothermal study of Tongonan Springs, Ormoc City, Leyte.** Deodoro B. Abiog (Supervising Geologist, Bureau of Mines, Manila). *Journal of the Geological Society of the Philippines*, June 1969, v.23, no.2, p.78-97. maps, tables, illus. 5 refs.

The temperature of thermal water from 6 major hot springs ranged from 98 to 100°C with



a total estimated heat discharge of 801,000 k-cal/min or approximately 55,900 kw. Field observations and chemical analysis of water samples indicated that most of the hot spring waters are fed from the surface and little comes from depth. Evidences indicated that the heat is of magmatic origin.

551.244

Landslides.

163. **"Land rise" phenomenon in Davao.** Nazario C. Vasquez and Bernardo S. Tolentino (Volcanologists, Philippine Commission on Volcanology, Quezon City). *Comvol Letter*, May-June 1969, v.3, no.3, p.1-3. illus.

The earthmound in Mahanob, Baganga (Davao Oriental) is definitely non-volcanic in origin. The land rise is the result of slumping caused by erosion of the toe of a slope, loading on top of the slopes and earthquakes.

551.510.7

Radioactivity — Measurement.

164. **Observations on environmental and atmospheric radioactivity in the vicinity of the PRR-1 from September 1961-December 1967.** A. pH. Salomon and B. C. Bernardo (PARC, Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.209-228. graphs, tables, illus. 8 refs.

Measurement of the levels of radioactivity in the surrounding areas of the Philippine Research Reactor-1 in Quezon City showed that the monthly average for air was 0.02-7.69 pCi/cu. m. and for rain, 0.00-1.42 pCi/c.c. Grass samples gave essentially background activity, while soil samples gave  $19 \pm 2$  pCi/kg ash to  $82 \pm 2$  pCi/kg ash. The methods of sampling and radioassay procedure used in the investigation are briefly discussed.

## BIOLOGY

576.8.095

Entamoeba histolytica — Pathogenecity.

165. **The new biology of pathogenic Entamoeba histolytica in human amoebiasis.** Eusebio Y. Garcia

(College of Medicine, Manila Central University, Caloocan City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968 (1969), pt.3, p.9-22. illus.

The biological characteristics of *Entamoeba histolytica* and *E. histolytica ferdi* are described. Observations revealed that the infective stage of *E. histolytica* is either binucleate or tetranucleate cysts. The trophozoites cannot stimulate antibody formation because they do not have exotoxin nor endotoxin. Only the xenodiagnostic inoculation to kittens best propagated the trophozoites.

Evaluation of a number of anti-amoebic drugs showed that the best combination is chloroquine-glycobiarsol-sigmamycin. Their action are in accordance with the new biology of *E. histolytica*.

577.15:[639.21+639.4/.5](914)

Enzymes. Sea food.

166. **Thiaminase in some species of fish, clams, and crustaceans in the Philippines.** Zenaida G. Luna, Anita M. Marzan, Anoprita A. Montilla and Priscilla I. Caasi (National Institute of Science and Technology, Manila). *Philippine Journal of Science*, June 1968(1969), v.97, no.2, p.145-151. table. 10 refs.

The presence of thiaminase was determined in 17 species of fish, clams and crustaceans by indirect method. Thiaminase activity was observed in most species of crustaceans and clams, while none was noted in fish. Boiling and subsequent storage for 3 mo. increased thiaminase activity which indicated the preserving and/or activating action of salt in the enzyme.

## BOTANY

581.192:635.976:631.571

Plants — Chemical composition. Anonaceae.

167. **Uvaria rufa Blume. A preliminary report on its constituents.** Alfredo C. Santos, Natividad Eufemio, Jose I. Sulit and Julieta R. Librea. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.185-190. 5 refs.

A crystalline compound with a melting point of 239-240° was isolated from the stem bark of



*Uvaria rufa* Blume. Analysis gave the following constituents: 85.30% C, 11.3% H and 3.33% O. The compound is not nitrogenated.

581.45:579.5

Leaves — Collection and preservation.

168. **Leaf mosaic: a new art in forestry.** Erico T. Enriquez. *Reforestation Monthly*, May 1969, v.8, no.5, p.5.

The procedure in making leaf mosaic is briefly discussed. The art involves the preservation of leaves (chlorophyll extracted) with only their structural formations or ribs left intact.

582.26:581.526.323.3

Algæ. Benthic flora.

169. **The Benthic marine algae of Corregidor Island and vicinity.** Gregorio T. Velasquez (Dept. of Botany, University of the Philippines, Diliman, Quezon City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.129-133. table.

Field surveys conducted in Oct. 1967 and April 1968 revealed 57 species. Algal growth was found more abundant in April than in Oct. especially *Sargassum*, *Turbinaria*, *Padina* and *Colpomenia sinuosa*. In Oct., *Halicoryne wrightii*, *Actinotrichia fragilis*, *Dictyota cervicornis*, *Hydroclathrus clathratus* and *Hypnea* sp. were found abundant. *Valoniopsis pachynema*, *Galaxaura oblongata*, *Amphinea handcockii*, *Halymenia durvillaei* and *Caulerpa* sp. were noted during the summer and rainy seasons.

582.282.23:539.12.04 661.72:577.15

170. **A study of the effects of gamma irradiation on two yeast strains including the rates on subse-**  
Yeasts. Gamma rays.

quent alcohol fermentation. G. R. Gatchalian, Dolores Hipolito, A. C. Gopez and J. G. Domingo. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.477-489. graphs, tables. 8 refs.

Fleischmann yeast and *Saccharomyces cerevisiae* irradiated with 500 curie Co-60 source were

used in the study. Results showed that irradiated yeast yielded higher percentages of alcohol at faster rates and higher alcohol tolerance than the unirradiated yeast. The best results were obtained from yeasts irradiated at a dose of 70 kr/hr for 8 hrs or for 15 hrs at 10 kr/hr.

582.282.23:576.8.093

Yeasts.

171. **The continuous culture of yeast.** Luz G. Paciona (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p. 469-475.

Results of studies on the continuous culture of *S. Cerevisiae* are discussed. It was found that by the continuous culture technique, the rate of cellular turnover was higher than any point of the batch cultures for any growth rate whether in high or low glucose. The technique is recommended where cellular production or related aspects are desired.

582.29:581.19(914)

Lichens — Chemical composition.

172. **Studies on Philippine lichens. I. Chemical constituents of *Physcia albicans* (Pers.) Thoms. and *Physcia picta* (Sw.) Nyl.** Patrocinio Sevilla Santos and Lydia M. Joson (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.199-204, *Philippine Journal of Science*, March 1969(1971), v.98, no.1, p.1-9. 22 refs.

Zeorin and atranorin were isolated from *Physcia albicans* (Pers.) Thoms., and atranorin and atranorin-chloratranorin mixture from *P. picta* (Sw.) Nyl. Atranorin exhibited antibiotic activity, while zeorin exhibited inactivity.

## ZOOLOGY

593.9(914)

Echinodermata.

173. **Summary of the "Monographic study and checklist of the Philippine littoral Echinodermata".** Jose S. Domantay (Graduate School Research Bio-



ogy Laboratory, University of Santo Tomas, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.153-183.

The checklist includes those belonging to Aseroidea, Ophiuroidea, Echninoidea, Holothurioidea and Crinoidea.

595.73:591.5 595.73:674.03

Termites.

174. **A study of some aspects on the life history and habits of *Microcerotermes los bañosensis* Oshima (Termitidae-Isoptera).** Milagros Kalaw-Monroy. *Wood Preservation Report* (Forest Products Research Institute, College, Laguna), March-April 1969, v.4, no.2 p.6-9.

Of 11 methods of rearing the Los Baños termites tried under laboratory conditions, only 1 sustained life of a termite for 44 days. The termites lived only an average of 3 days in other methods. The average moisture content of the termite's nest by oven-drying method was 24%.

The termite was found to attack 13 commercial species of Philippine woods in the Forest Products Research Institute in College (Laguna).

595.78(914)

Butterflies.

175. **Additional notes on the *Trogonoptera trojana* of Palawan, Philippines.** Julian N. Jumalon. *Leyte-Samar Studies*, 1969, v.3, no.1, p.57-65. illus. 3 refs.

The larval stages, pupation and eclosion, habits and foods of *Trogonoptera trojana* are briefly discussed. A detailed description of the immatures is also given.

598.2:591.69:591.11 636.5:591.69:591.11

Blood — Parasites — Birds.

176. **Blood parasites in domestic and wild birds in the Philippines.** Mauro F. Manuel, Alfredo Prado, Oscar Vidal and Ovidio Parayno (Dept. of Veterinary Parasitology, College of Veterinary Medicine, University of the Philippines, Diliman, Quezon City). *Proceedings of the National Science and*

*Technology Week*, July 15-21, 1968(1969), pt.4, p.93-106. 20 refs.

The haemosporidian parasites found in chickens were *Plasmodium juxtanucleare*, *Leucocytozoon caulleryi*, and *Aegyptianella*-like organisms. *Haemoproteus columbae* was found commonly occurring in domestic pigeons. The blood parasites found in wild birds were *Trypanosoma* sp. and *Leucocytozoon* sp.

598.2(914) 599(914)

Birds. Mammals.

177. **The altitudinal distribution of the birds and mammals of the Philippines.** Dioscoro S. Rabor (Research Prof., Mindanao State University, Marawi City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.13-78. tables. 16 refs.

The distribution of 687 forms of resident birds and 245 species and subspecies of land mammals according to habitat and altitudinal ranges in the various islands is discussed.

599.742.7:591.5(914) 591.5:636.8(914)

Mammals — Habits and behavior. Cats.

178. **Notes on the food habits of three Philippine wild mammals.** Angel C. Alcala and Walter C. Brown. *Silliman Journal*, First Quarter 1969, v.16, no.1, p.91-94. table. 3 refs.

Results of the study on 3 species of the cat family showed that *Felis minuta* feeds on rats; *Paradoxurus philippinensis*, on fruits; and *Viverra zibetha*, on birds. *Paradoxurus* is the least carnivorous, eating a wide variety of fruits, while *Felis* is the most carnivorous.

## MEDICINE

### PHYSIOLOGY

612.015(=914)

Polymorphism (genetics).

Glucosephosphate dehydrogenase deficiency.

179. **Some biochemical polymorphic traits (Filipino population): 2. Glucose-6-phosphate dehydrogenase deficiency and electrophoretic variants.** Pelagia S. Bayani-Sioson (College of Dentistry,



University of the Philippines, Manila). *Acta Medica Philippina*, ser.2, April-June 1969, v.5, no.4, p.156-163. graph, tables, illus. 38 refs.

Of the 833 male subjects observed, 6.72% were found to have G-6-PD deficiency using Motulsky and Campbell-Kraut method. The electrophoretic variant of G-6-PD enzymes of some of the subjects with normal enzyme levels was Type B+. The method used in the determination of the qualitative type of G-6-PD was by Porter, et al. The implications of these findings in the light of endemic malaria in the Philippines are briefly discussed.

612.015(=914)

Water in the body.

180. **Determination of total body water in normal healthy Filipino subjects with the use of tritiated water.** Ireneo Lawas (College of Medicine, University of the Philippines, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4; p.295-307. graph, tables, illus. 10 refs.

Determinations made on 33 normal adult subjects showed that the mean total body water in males and females are 36.3 and 23.8 liters, respectively, and the percentage body water value/kg body weight are 61.4 in males and 50.8 in females.

612.313

Saliva — Secretion.

181. **When one's mouth waters, does salivary secretion increase?** Arthur Cuyugan, Juanito Magbanua, Tabitha Belulia, Romeo Mielat and Cornelius Turalba (Dept. of Physiology, College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser.2, Oct.-Dec. 1967, v.4, no.2, p.104-105. graphs, table. 2 refs.

The basal secretions in 3 subjects were determined following stimulation by: 1) sight of green mango; 2) thought of savory foods; and 3) smell of chicken. Results showed that salivary secretion increases only slightly, if at all, when one's mouth waters.

613.2:308(914)

Nutrition surveys.

182. **An evaluation of the clinical data from eight regional nutrition surveys undertaken by the Food and Nutrition Research Center.** A. A. Bayan, A. J. Matawaran and C. C. Gervasio (Food and Nutrition Research Center, National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.429-444. graph, tables. 18 refs.

Dietary, biochemical and clinical surveys conducted in 1958-1967 showed that in general appearance, 76.3% of the population was rated as fair, 14.5% as good and 9.2% as poor. Total mean calorie intake was found inadequate amounting to only 3/4 of the recommended levels. Signs of nutritional deficiency observed were mostly those of vitamin A, riboflavin, niacin, vitamin C, iodine, thiamine and iron. Pregnant and nursing mothers showed higher incidence of enlargement of the thyroid glands than the general average, indicating that they are more vulnerable to iodine deficiency. The average incidence of parasitism was 88.5%, with ascaris as the most common infesting parasite.

613.24:616-053.1/.2

Infant nutrition disorders.

183. **The critical periods of vulnerability to nutritional deficiencies in a child's life.** Martina Tirona Certeza (Faculty of Medicine and Surgery, University of Santo Tomas, Manila). *Philippine Journal of Pediatrics*, April 1969, v.18, no.2, p.87-97. graphs, tables, diagr.

The study showed that the death rate due to nutritional deficiencies is highest during the first year of life, followed by the 1-4 yrs age group. The nutritional deficiency was mostly in the form of protein-calories malnutrition during the first year and was associated with multiple vitamin deficiencies until the 6th yr.

613.943:614.25

Contraceptives, Oral. Intrauterine devices.

184. **Oral and Intrauterine contraception: attitudes of rural practitioners in Central Luzon.**



Vicente J. A. Rosales (Faculty of Medicine, University of Santo Tomas, Manila). *Santo Tomas Journal of Medicine*, March-April 1969, v.24, no.2, p.69-86. tables. 1 ref.

A survey conducted in Central Luzon among 59 medical general practitioners showed that approximately 1/2 prescribe oral contraception, 1/4 recommend intrauterine contraceptive device (IUD) and the others object to oral and intrauterine contraceptions. Male physicians favor the use of oral contraception, while the females favor IUD. The 30-39 age group of physicians are the stronger advocates of contraception and had the lesser moral or religious reservations regarding this practice than the older physicians.

## CHILD HYGIENE

613.95:616-053.2(=914)

Children — Growth and development.

Child health services.

185. **Patterns of growth and development in sick Filipino children belonging to the lower socio-economic levels.** Josefina Caldito and Carmencita Buenviaje (Pediatrics Service, University of Santo Tomas Hospital, Manila). *Philippine Journal of Pediatrics*, June 1969, v.17, no.3, p.156-168, tables. 6 refs.

A 2-yr follow-up study was conducted on subjects ranging in age from 1 yr to puberty. It was noted that 77.8% of the children on admission to the hospital were physically retarded with the highest incidence in the older children. Progression of the retardation was more evident among infants. In most cases, the retardation was not attributable to the primary ailment but rather to other factors such as tuberculosis and inadequate food intake due to poverty. It is suggested that hospitals with charity wards should expand their social and domiciliary services for a better continuing pediatric care so that under-privileged children may attain an optimum state of health.

613.95(914)

Child development.

186. **Some aspects in the health of an "only" child during his first five years as observed in the Phil-**

**ippines.** Cecilia Marcos (Children's Medical Center, Quezon City). *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no.5, p.308-312. tables. 4 refs.

A comparative study was made on the health status of 27 "lone" children (Group I) and 27 children belonging to a big family (Group II). It was found that Group I children had regular well-child check-ups and more adequate immunizations than Group II children. The average incidence of common illnesses was significantly lower in Group I than in Group II, although respiratory and intestinal infections occurred commonly in both groups. The height and weight of Group I children were either average or above-average.

## PHARMACOLOGY

615.5:612.118:616-008

Lipids — Blood.

Clofibrate — Pharmacodynamics.

187. **Experiences with clofibrate as a serum lipid lowering agent.** Leland S. Villadolid, Anacleto I. Iledan, Evelyn O. Bacani and Louridale Velarde (Dept. of Medicine, Philippine General Hospital, Manila). *Acta Medica Philippina*, ser.2, April-June 1969, v.5, no.4, p.164-167. graph, tables. 13 refs.

Good lipid and/or cholesterol lowering effect was demonstrated in 40 subjects with various metabolic disorders given 1.5 g daily of clofibrate for 2-4 wks. Serum cholesterol, serum lipids and serum phospholipids showed an average mean lowering of 52.6, 77.8 and 2.9 mg%, respectively. The normal range was attained 2-4 wks after therapy with minimum and mild side effects. There was no correlation between markedly elevated lipid levels and length of therapy required. Withdrawal of clofibrate therapy for more than 4 wks apparently caused a reversion of cholesterol and lipid values to their pre-treatment levels.

615.71:582.263 615.74:582.263

Chlorella.

188. **Cardiovascular and hypoglycemic effect of chlorella.** Conrado Dayrit and Nelia F. Cortes-Maramba (College of Medicine, University of the Philippines, Manila). *Proceedings of the National*



*Science and Technology Week*, July 15-21, 1968 (1969), pt 3, p.181-203. graphs, tables.

The study was conducted on mongrel dogs and rats anesthetized with sodium phenobarbital. Results showed that chlorella at a dose of 0.2 c.c/kg or more consistently caused a lowering in blood pressure in dogs. With 1 c.c/kg or less of chlorella, heart rate and left and right atrial pressure changes were inconsistent, while femoral blood flow significantly increased. The hypoglycemic effect of 20% chlorella is very significant, ranging from 30.1 to 62.2%.

615.779

Antibiotics — Isolation & purification.  
Actinomycetales.

189. **Antibiotics from actinomycetes. I. Isolation and identification of an "actinomycin complex" produced by a local streptomyces.** Lydia M. Joson, Patrocinio S. Santos, Julieta R. Librea and Zosima P. Bernardo. *Proceedings of the National Science and Technology Week*, July 15-21, 1968 (1969), pt.4, p.249-253. 13 refs.

A red, hexagonal, bipyramidal crystalline compound with m.p. 261-263°, was isolated from a local species of *Streptomyces*. Acid hydrolysis of the compound gave 6 amino acids corresponding to hydroxyproline, threonine, sarcosine, proline, valine and an unidentified amino acid.

615.78:578.083/.084

Reserpine — Pharmacodynamics.

190. **On the mechanism of reserpine action on uterine musculature.** Gerardo V. de Leon. *Journal of the Philippine Medical Association*, Oct. 1967, v.43, no.10, p.832-843. graphs, table. 12 refs.

*In vitro* and *in vivo* studies showed that reserpine counteracted and prevented the uterine contractions provoked by BaSO<sub>4</sub>, oxytocin, posterior pituitary, histamine phosphate and ergonovine maleate in mice, rats, rabbits, guinea pigs, cats, dogs and humans. Reserpine inhibitory effects on the myometrial tissues were elicited directly on the effector contractile mechanisms. Its effects were not prevented nor significantly diminished by adrenergic blocking agents such as Phentolamine

and Guanethidine. Reserpine was found to inhibit the stimulant action of the catechol amines on the uterus of pregnant cats. Also, it inhibited the O<sub>2</sub> consumption of rat uterine smooth muscles.

#### DISEASES. PATHOLOGY

616-002.3:616-093 (914)

Furunculosis.

191. **Bacteriologic survey of summer furunculosis in the Philippines (A preliminary report).** Lino Ed. Lim, Elisa C. Tan and Perla Lim. *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no.5, p.303-307. tables. 16 refs.

A survey of summer furunculosis conducted in March-May 1966 revealed a high incidence among pre-school age children which presented problems on penicillin resistance. Staphylococcus coagulase positive infections were seen in 28 of 36 cases of scalp furunculosis and in 7 of 9 cases of ear infection. Nasal swabs done on 26 healthy children of patients with boils revealed that 9 were carriers of staphylococcus coagulase positive. A probable close correlation of otitis media with scalp furunculosis was considered. No attempt was made to correlate the phage of the organisms isolated from the patients and the carriers.

616-002.5:616-097:616-053.2

Immunoglobulins — Analysis.  
Tuberculin test.

192. **Immunoglobulins in tuberculin-sensitive children.** Perpetua Lacson, Lucille Diaz de Rivera, Estrella de Leon, Jose Cortes and Angelina Latonio (U.E. Ramon Magsaysay Memorial Medical Center, Quezon City). *Philippine Journal of Pediatrics*, June 1969, v.17, no.3, p.143-155. graph, tables, illus. 22 refs.

A comparison between the immunoglobulin levels of 29 tuberculin-positive children and 25 children with negative reaction showed a significant elevation of the Immunoglobulin G (IgG) among those who demonstrated positive reaction. The Immunoglobulin A and Immunoglobulin M were not influenced by tuberculin sensitivity. The weak and strong positive reactors determined the immunoglobulin rise and the strength of the tu-



berculin reaction. The importance of IgG elevation in infections and in tuberculosis is discussed.

616-005:615.71 615.71:616-005

Hypertension — Drug therapy.

193. **ST 155 (Catapres, Catapresan) in the treatment of hypertension.** Lilia G. Maranan and Mariano M. Alimurung. *Santo Tomas Journal of Medicine*, March-April 1969, v.24, no.2, p.61-68. tables; illus. 12 refs.

Clinical study of 25 hypertensive patients showed that a small dose of ST 155 (Catapres) is an effective anti-hypertensive agent. However, dryness of the mouth was complained of. Further studies are being carried out to establish the clinical usefulness of the drug.

616-006.6:616.34

Adenocarcinoma. Jejunum.

194. **Primary adenocarcinoma of the jejunum: report of a case and review of the literature.** Emmanuel C. Besa (Dept. of Medicine, College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser.2, April-June 1969, v.5, no.4; p.168-172. tables, illus. 27 refs.

The case reported is the first to be described from the Philippines. The patient was a 68-yr-old male who presented with an obstructive syndrome and an abdominal mass. Exploratory laparotomy was done and the postoperative course was uneventful except for minor skin complaints of seborrheic dermatitis and a perianal lump which was successfully excised.

616.15-053.2

Leukocyte count.

195. **The value of the leukocyte count in illnesses. (As observed in 254 Filipino children).** Sonia I. Medira and Ludivina G. Caballero (Children's Medical Center, Quezon City). *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no.5, p.285-293. graphs, tables. 6 refs.

The leukocyte counts of 254 patients with different illnesses were analyzed. All cases of ruptured appendicitis showed above 16,000/cu.mm,

and 12,000-15,000/cu.mm for unruptured cases and majority of the cases with bacterial infections (meningitis, empyema, sepsis) responded with leucocytosis. Moderate or mild leucocytosis was observed in cases of roseola infantum, rubeola and poliomyelitis. Leucopenia and lymphocytosis were noted in cases of dengue fever, and cases of typhoid fever responded with leucopenia and neutrophilia.

616.2-008.6:616-071

Respiratory distress syndrome.

196. **Respiratory distress syndrome (hyaline membrane disease).** Raul C. Banagale. *Santo Tomas Journal of Medicine*, May-June 1969, v.24, no.3, p.152-158. table, illus. 9 refs.

The syndrome includes 2 distinctive patterns of disease, namely, hyaline membrane formation with progressive atelectasis and "idiopathic respiratory distress", wherein there is only resorption atelectasis without hyaline membrane formation. The primary causes, pathology, clinical manifestations and diagnoses, laboratory and physical findings, and treatment of the disease are briefly discussed.

616.22-085

Laryngeal diseases — Therapy.

197. **Laryngo-fissure approach to bilateral abductor paralysis.** Ariston G. Bautista and Rene-Edgar R. Mendoza (Dept. of Ophthalmology and Otolaryngology, U.E. Ramon Magsaysay Memorial Medical Center, Quezon City). *Philippine Journal of Ophthalmology and Otolaryngology*, Jan.-June 1969, v.21, nos.1-2, p.26-32. illus. 7 refs.

The ideal procedure for treating bilateral abductor paralysis of the larynx is presented. A case in which indirect laryngoscopy was done showed a good-sized glottic chink with subsistence of the vocal cord swelling. The patient showed improvement and tolerated the closure of the tracheostomy tube time.



616.34:616.995

Intestinal perforation. Trichuriasis.

198. **Intestinal perforation in a case with trichuriasis.** Eugenio B. Sevidal (Dept. of Pediatrics, Far Eastern University Hospital, Manila). *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no. 5, p.330-333. illus. 8 refs.

The anomaly is reported in a 2-yr. and 7-mo. old male seen at the Far Eastern University Hospital (Manila). Exploratory laparotomy was performed and histopathologic diagnosis revealed an inflammatory process, sub-acute, non-specific colon and parasitism (*Trichuris trichura*). The harmful effect of this seemingly benign parasite is emphasized.

616.34-008.3:616-053.1/.2

Diarrhea, Infantile.

199. **Isolates in 152 bacterial cultures of diarrheal disorders in infants and children.** Victor Abello (UP-PGH Medical Center, Manila). *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no. 5, p.313-319. tables. 13 refs.

Lactose fermenters, specifically *Escherichia coli*, were the most common bacterial isolates in gastroenteritis in children below 5 yrs old. There was a drop in the incidence of Shigella-Salmonella infection compared with previous works. Aids in clinical diagnosis and management of diarrheal disorders are discussed.

616.36-008:616-056.7

Jaundice — Diagnosis.

200. **Rotor's syndrome: a family study.** Pio F. Poblete, Milagros Reyes, Lourdes Manahan and Adelaida Dalmacio-Cruz (Dept. of Medicine and Pathology, College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, Oct.-Dec.1967, v.4, no.2, p.64-71. table, illus. 31 refs.

A family was studied in which 3 members in the sibship belonging to the 4th generation were found to have Rotor's syndrome. Pedigree analysis of the family showed that transmission of the

disorder may be conditioned by an autosomal recessive gene. The absence of abnormal hepatic cell pigmentation was a constant finding.

616.36-008:616-078:616-053.1/.2

Leucine aminopeptidase — Blood.

201. **Serum leucine aminopeptidase activity in infants and children: its use in hepatobiliary disease.** Perla D. Santos-Ocampo, Asteria C. Chan, Dominga M. Ilarde, Ildefonso T. Cruz, Pablo Arnechilla and Artemio P. Jongco. *Philippine Journal of Pediatrics*, April 1969, v.18, no.2, p.72-86. tables. 62 refs.

A study on the micromethod assay of serum leucine aminopeptidase activity (LAP) was conducted. The serum LAP value obtained were: 1) 70-300 G-R units for Filipino children; 2) 205-450 G-R units in cases of neonatal hepatitis; and 3) 515-965 G-R units in infants with biliary atresia. The method is advantageous because it does not necessitate the withdrawal of blood.

616.36-073

Tuberculosis, Hepatic. Radiography.

202. **Roentgen findings in a scout film of the abdomen in tuberculosis of the liver.** Jose S. L. Valencia and Conrado S. Pesigan (Santo Tomas University Hospital, Manila). *Santo Tomas Journal of Medicine*, Nov.-Dec.1967, v.22, no.6, p.380-384. tables. 17 refs.

The most common findings in the study of 10 cases of tuberculosis of the liver were hepatomegaly, depression of the hepatic flexure, lateral deviation of the gastric air bubble and hepatic calcification. Other roentgen features noted were paravertebral and splenic calcification, splenomegaly, depression of the splenic flexure, medial deviation of the gastric air bubble, depression of the left kidney and ascites.

616.37-07:616-053.2

Pancreatitis — Diagnosis.

203. **Acute pancreatitis in children.** Alfredo C. Roque, Jr., Pelagio V. Iriarte, Jr. and Alex Panuncialman (San Pedro Hospital, Davao City).



*Philippine Journal of Pediatrics*, Oct. 1967, v.16, no.5, p.281-284. 6 refs.

Four cases of acute pancreatitis seen in a period of 1 yr at the San Pedro Hospital (Davao City) are reported. The significance of serum amylase and lipase tests in determining increased concentrations of pancreatic enzymes in the blood is discussed. These diagnostic tests eliminate unnecessary surgical explorations.

616.44

Thyroid diseases.

204. **Chromosomes studies in heritable thyroid diseases.** Flora M. Pascasio, Visitacion Manipol and Paulo C. Campos (Dept. of Medicine, UP-PGH Medical Center, Manila). *Journal of the Philippine Medical Association*, Oct. 1967, v.43, no. 10, p.857-860. table, illus. 14 refs.

Studies made on 30 cases of hyperthyroidism and endemic and non-endemic goiters showed that these conditions are not associated with gross chromosomal abnormalities either morphologically or numerically. The hyperthyroid cases showed high PBI, RAI uptake, low  $T_3$  Sephadex value and low cholesterol. The endemic and non-endemic goiter cases showed normal PBI,  $T_3$  Sephadex, cholesterol and high 24-hr  $I^{131}$  uptake.

616.61-073

Kidney — Radiography. Radioisotope scanning.

205. **Renal scintiscan: clinical applications.** Antonio D. Talusan and Paulo C. Campos (Dept. of Medicine, UP-PGH Medical Center, Manila). *Journal of the Philippine Medical Association*, Oct. 1967, v.43, no. 10, p.844-856. table, illus. 4 refs.

The radioisotope renal scintiscan using  $Hg^{203}$  labelled Neohydrin proved to be a diagnostic tool in the study of various kidney conditions such as localization for percutaneous kidney biopsy and delineation of space-occupying lesions of the kidney, and in the diagnostic evaluation of hypertensive patients and the relative kidney size. It was also used as an adjunct in the study of cases with anuria and azotemia.

616.91(914)

Hemorrhagic fever — Epidemiology.

206. **Was Philippine hemorrhagic fever present before 1954?** Josefina C. Caldito and Cornelia M. Tiongson (Pediatric Service, Santo Tomas University Hospital, Manila). *Philippine Journal of Pediatrics*, Oct. 1967, v.16, no.5, p.294-302. graphs, tables, illus. 14 refs.

A review of 30 patients diagnosed and treated as acute idiopathic thrombocytopenic purpura during the years prior to the first epidemic of Philippine H-fever yielded 1 case whose clinical and laboratory features and anatomical changes simulated those of Philippine H-fever. A statistically significant decrease in the incidence of acute idiopathic thrombocytopenic purpura seen in the Santo Tomas University Hospital (Manila) in 1955-1965 may possibly indicate that Philippine H-fever existed during these years. A re-evaluation of cases of acute idiopathic thrombocytopenic purpura is suggested so that those which simulate H-fever may be used in conducting virologic and serologic tests in determining the etiology of the disease.

616.982-097(=914)

Antigens. Mycobacterium infections — Immunology.

207. **Comparative sensitivity of Filipino medical and paramedical students to PPD-S and PPD-B antigens.** Juan C. Portes, Jr. (Dept. of Epidemiology and Biostatistics, Institute of Hygiene, University of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, Oct.-Dec. 1967, v.4, no.2, p.51-55. graph, tables. 9 refs.

A total of 260 apparently healthy subjects were tested with PPD-S and PPD-B antigens to determine whether or not infection with an atypical mycobacterium (Battey organism) is present among Filipinos. Results revealed that 45.5% and 24.2% were positive and negative, respectively, to both antigens; 80 cases were positive either to PPD-S or PPD-B. The findings suggest the existence of Battey infections resulting from organisms which are antigenically related to Battey organisms.



616.993-071

Intestinal diseases, Parasitic.

208. **Human intestinal capillariasis. I. Clinical features.** Urbano Daus, Benjamin D. Cabrera and Benjamin Canlas, Jr. *Acta Medica Philippina*, ser.2, Oct.-Dec. 1967, v.4, no.2, p.72-83. tables, illus. 8 refs.

Five cases of intestinal capillariasis are reported. The outstanding clinical feature was the occurrence of intractable diarrhea and rapid emaciation which proved fatal in 3 cases. Laboratory findings appeared to simulate the picture of malabsorption syndrome.

616.993-092

Intestinal diseases, Parasitic.

209. **Human intestinal capillariasis. II. Pathological features.** Benjamin D. Canlas, Jr., Benjamin D. Cabrera and Urbano Daus. *Acta Medica Philippina*, ser.2, Oct.-Dec. 1967, v.4, no.2, p.84-91. illus. 13 refs.

Pathological studies on 3 cases of intestinal capillariasis revealed that the small intestine, particularly the jejunum was the preferred site of infestation. The anatomical lesions were largely confined to the mucosal layer consisting of alterations in the mucosal pattern, degenerative changes in the lining epithelial cell and inflammatory changes in the lamina propria. The possible functional effects of the parasitic infestation and the anatomical lesions are discussed.

616.993-098

Intestinal diseases, Parasitic.

210. **Human intestinal capillariasis. III. Parasitological features and management.** Benjamin D. Cabrera, Benjamin Canlas, Jr. and Urbano Daus. *Acta Medica Philippina*, ser.2, Oct.-Dec. 1967, v.4, no.2, p.92-103. graphs, tables. illus. 7 refs.

The acid-ether concentration technic was used in the parasitological diagnosis of 5 cases of intestinal capillariasis. *Capillaria* adult parasites were recovered from stool specimens and the small intestines.

Thiabendazole and dithiazanine were given, but were not effective because there were both

clinical and parasitological relapses in most of the treated cases. It is believed that internal multiplication of the parasite takes place in the intestinal mucosa.

616.995:614.44(914)

Schistosomiasis — Prevention &amp; control.

211. **Cercarial enzyme-inhibition, a more effective control of schistosomiasis in the Philippines.** Eusebio Y. Garcia (College of Medicine, Manila Central University, Caloocan City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968 (1969), pt.3, p.23-36. illus. 1 ref.

The control measure is based on the biological fact that the *Schistosoma japonicum* cercariae invade the bare skin exposed to contaminated water. The method consists of washing the affected extremities with 0.2% CuSO<sub>4</sub> for 1.5 min, and for another 1.5 min with 0.5% CuSO<sub>4</sub>.

616.995-074

Nematode infections — Diagnosis.

212. **Comparison of Kato's thick smear technic and brine flotation technic in the detection of common helminthic infections.** Nonette L. Jueco (Dept. of Parasitology, Institute of Hygiene, University of the Philippines, Manila). *Acta Medica Philippina*, ser.2, April-June 1969, v.5, no.4, p.148-151. tables. 5 refs.

Examination of 247 stool specimens showed that the Kato's thick smear (KTS) technique is more efficient in detecting *Ascaris* infection than the brine flotation technique. However, there is no difference between the methods in the detection of *Trichuris* and hookworm infections. Since *Ascaris*, *Trichuris* and hookworm infections usually occur together, KTS is best recommended due to its efficiency in detecting not only common nematode ova but also cestodes, trematode ova and heterophyid eggs.

616.995-089

Schistosomiasis. *Schistosoma japonicum*.

213. **Schistosomiasis japonicum: surgical removal of adult schistosomes from the portal blood.** Jose P. Caedo (Consultant, Dept. of Surgery, U.E.



Ramon Magsaysay Memorial Medical Center, Quezon City). *Philippine Journal of Surgical Specialties*, March-April 1969, v.24, no.2, p.65-74, table, illus. 15 refs.

The modern operation consists of extracorporeal hemofiltration of the adult schistosomes from the portal blood after splenectomy. In 7 cases operated on, 2 had no worms from the portal blood, and in 5 cases, 4-265 worms were found. Only 1 patient died and the others gained in weight and height; signs of infantilism markedly diminished in all cases.

#### OPHTHALMOLOGY

617.7:616-057

Eye diseases — Prevention & control.

214. **Industrial ophthalmology (1).** Manuel G. Hechanova, Jr. *MD Journal*, Oct. 1967, v.16, no.10, p.697-700.

Eye complaints in large companies range from 2 to 5% and are occasionally higher among those in the clerical job category. Thus, it is imperative that prevention of industrial eye accidents be carried out through pre-employment ophthalmological examination, use of protective devices, and diagnosis and treatment of refractive errors, eye diseases and accidents.

#### OBSTETRICS

618.3:616-006

Pregnancy complications. Meigs' syndrome.

215. **Meigs's syndrome and pregnancy.** William T. Griffin (Assoc. Prof. of Obstetrics & Gynecology, University of Missouri School of Medicine, N. D., Columbia). *MD Journal*, Oct. 1967, v.16, no.10, p.641-644. 10 refs.

Three case reports of Meigs's syndrome complicating pregnancy are presented. Clinical studies proved that the occurrence of the disease in normal pregnancy is coincidental, such that diagnosis and treatment are the same for both pregnant and non-pregnant patients. The diagnosis, treatment and prognosis of Meigs's syndrome are discussed.

#### VETERINARY MEDICINE

619:616.986.7:636.4(914) 636.4.089(914)

Leptospirosis — Veterinary. Swine — Diseases and pests.

216. **Studies on leptospirosis in the Philippines: I. A preliminary report on the isolation of a *Leptospira* sp. from a pig.** Teodulo M. Topacio, Estela G. Famatiga and Milagros H. Suva (College of Veterinary Medicine, University of the Philippines, Diliman, Quezon City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.95-112. tables. 15 refs.

Isolation studies were made on kidneys of 172 bubaline and 345 porcine. Only 1 pig from Occidental Misamis was found positive for *Leptospira* sp. presumed to be *L. pyrogene*.

619:616.993-085(043) 636.5.089:615.778(043)

Poultry — Diseases and pests — Therapeutics.

217. **Some observations on the influence of four sulfa preparations in controlling roup and coccidiosis among chickens raised on built-up litter at the Cagayan Valley Institute of Technology.** Pedro S. Sanchez. Victoroneta Park, Malabon, Rizal, Institute of Graduate Studies and Applied Research, Araneta University Foundation, June 1969. xi, 62p. graphs, tables, illus. 17 refs. (Thesis. M. S. in Agriculture, Major in Animal Husbandry)

Results of the study on 250 day-old Vantress broilers showed that sulfamerazine, sulfadiazine, sulfaguanidine and sulfaquinoxaline were effective in the control of coccidiosis, but had very little effect in the control of roup.

619:616.995:636.7(043)

Dogs — Diseases and pests. *Toxocara canis*.

218. **The incidence of *Toxocara canis* and other gastro-intestinal parasites among dogs in Manila and suburbs.** Ernesto B. de Leon. Diliman, Quezon City, College of Veterinary Medicine, University of the Philippines, April 1969. 3l, 28p. tables. 22 refs. (Thesis. Doctor of Veterinary Medicine)



In 500 fecal samples, the following were encountered: *Ancylostoma* sp., *Toxocara*, *T. vulpis*, *Dipylidium caninum*, *Strongyloides* sp., *Isospora* sp., *Taenia* sp. and *Spirocerca lupi*. The incidence of toxocariasis was significantly higher in native than foreign-bred, and in young than old dogs, also, ancylostomiasis was also significantly higher in the latter.

## ENGINEERING

621.039.519.4:621.039.54

Nuclear reactors — Fuel.

219. **Criticality studies with thorium-uranium fuel assemblies.** Librado D. Ibe (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.269-276. graph, tables. 6 refs.

Criticality calculations were made on light water-moderated reactor critical assemblies using fuel pins containing Th-232 and U-235 with nominal ratio of 15:1. The fuel pin array was square with pitches varying from 0.36 to 0.60 in. Results showed that the computer codes developed were reliable for physics calculations of light-water reactor system. Data on physical dimensions and calculated fuel mass, and comparison of the critical radii and critical masses with previously determined experimental values are given.

621.039.532:539.171.4 539.125.5.164.07

Neutrons — Measurement. Nuclear reactors — Moderators.

220. **Application of nuclear track plates in spherical moderators for neutron dose and energy measurements around research reactors.** M. V. Vives and E. S. Mendoza (Philippine Atomic Research Center, Diliman, Quezon City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.291-302. tables, illus. 5 refs.

A system which can provide measurements of the dose and average energies of scattered neutrons of unknown spectrum and direction in research reactors is described. Experiments at the

Philippine Research Reactor-I showed that the system is an adequate dosimeter and spectrometer. The average energies measured ranged from thermal to 3 Mev, hence neutrons from thermal to fast can be detected. The dose rates measured were comparable with values obtained with a DN<sub>3</sub> neutron survey meter.

621.039.572:621.372.52

Nuclear reactors — Testing.

221. **Experimental measurement of feedback reactivity of a point reactor.** Ricardo J. Palabrica (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.277-290. graphs, illus. 3 refs.

A simple and accurate method was developed and tested with experiments on a swimming pool type reactor, with low and high power responses measured for ramp inputs. The feedback function obtained was applied to a 2-temperature mathematical model of the reactor to calculate the 2-temperature coefficients of reactivity. Results showed that unlike the feedback reactivity function the low power reactivity function varied linearly with time.

621.7-776:539.1.074.2

Counters (electrons, ions, etc.).

222. **An apparatus for local fabrication of gas counters.** Melchor Palaganas and Q. O. Navarro. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt. 3, p.587-596. flowsheets.

The fabrication apparatus consists of the vacuum system and related measuring equipment, vacuum manifold and baking oven, purification system and gas manifold and electronic testing. The procedures in the fabrication and testing of counter tubes, including the purification of the filling gas are discussed in detail.

## AGRICULTURE AND FORESTRY

631.1:631.371

Farm management.

223. **Farm (mechanization) management (rice-legume-sugarcane production).** Julian Bulanadi



(Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.205-211. tables. 6 refs.

In the management of mechanized farms, balanced-farming is encouraged by way of crop rotation and soil building practices. A cropping pattern of rice-sugarcane-legume is presented. Also, a cost estimate of the operation of a mechanized farm is given.

631.354:633.18

Rice — Implements and machinery.

224. **Polaris introduces MF 39-6 rice combine.** *Philippine Farmers' Journal*, June 1969, v.11, no.2; p.9.

Massey-Ferguson 39-6 rice combine is a propelled self-harvesting and threshing machine driven on concave-contoured self-cleaning tracks and steered on pneumatic-tired wheels. In a farm test in Nueva Ecija, MF 39-6 demonstrated its adaptability to difficult field conditions and performed with high efficiency particularly in grain recovery.

631.362:633.1

Grain driers.

225. **UPCA designs new grain dryer.** *Agricultural and Industrial Life*, Oct. 1967, v.29, no.10, p.18. diagr.

A flat bed-type grain drier designed by the College of Agriculture, University of the Philippines in College (Laguna) is described. The dryer reduces grain moisture to 14% in about 7 hrs.

631.41/.42

Soils — Base exchange.

226. **Dehydration and cation exchange capacity of the forested soils of Mt. Makiling.** Martin E. Raymundo and M. M. Khan (College of Agriculture, University of the Philippines, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.427-434. graphs, table. 4 refs.

A change in the cation exchange capacity (CEC) of the soils at high elevations was observed

when subjected to dehydration. Maximum reduction of the CEC was obtained from samples taken above 800 m elevation where water retained at field condition was also greatest. The average reduction or loss in CEC by dehydration from field condition to air-dry condition and from air-dry to oven-dry condition was 48 and 15 m.e/100 g, respectively.

631.42

Soil analysis.

227. **"Burning sands" in Basey, Western Samar investigated.** Pedro J. Almoradie, Jr. and Bernardo S. Tolentino (Geologist and Volcanologist, respectively, Philippine Commission on Volcanology, Quezon City). *Comvol Letter*, May-June 1969, v.3, no.3, p.4.

Field observations indicated that the burning phenomenon in the area is due to the combustible nature of the soil which was ignited by an external source. The highly porous black and lumpy soil is rich in hydrocarbons. Preliminary findings indicated the presence of petroleum. The nature and forms of the combustible "hydrocarboniferous soil" were subjected to further chemical analysis.

631.53

Plant propagation.

228. **Bark and cambium regeneration as a factor in plant air-layering.** Leopoldo B. Uichanco. *Philippine Journal of Science*, June 1967(1969), v.96, no.2, p.139-142.

A modified method of air-layering is briefly discussed. The method proved successful with *Ixora* (santan), citrus and roses. The failure of the standard method of air-layering in the tropics seems to be due to environmental factors.

631.53:582.949.1

Gmelina arborea.

229. **Propagation of Melina by cuttings.** Tomas M. Binua and Aligan D. Lucop. *Reforestation Monthly*, June 1969, v.8, no.6, p.15.

Trial propagation of Melina by cuttings was conducted in the Reforestation Stations in Zamboanga del Norte and Zamboanga del Sur. Cut-



tings grown in shaded seedbeds gave 73% survival rate. Direct field planting of cuttings also gave encouraging survival rate, indicating that the species responds favorably to vegetative propagation and more so to natural regeneration.

631.879:636.5

Poultry manure. Fertilizers.

230. **Yield and fertilizing constituents of manure of New Hampshire and Single Comb White Leghorn chickens.** Juan S. Padilla, Valente Villegas, Aurora C. Feliciano and Arturo T. Chinte (College of Agriculture, University of the Philippines, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.491-498. tables.

The manure yield of S.C. White Leghorn roosters was found to be 0.20-0.98 kg/bird/wk and of the hens, had 0.35-0.76 kg/head/wk, the New Hampshire roosters yielded 0.40-1.10 kg/bird/wk and the hens, 0.52-1.24 kg/bird/wk. Analysis of the manure of both birds revealed  $N_2$ ,  $K_2O$  and  $H_3PO_4$ .

632.952:633.61:632.4

Fungicides. Sugar cane — Diseases and pests.

231. **Laboratory evaluation of some fungicides for the control of pineapple disease of sugarcane.** J. R. Rivera and I. B. Cano (Philippine Sugar Institute, Bacolod City). *Philippine Sugar Institute Quarterly*, Sept. 1967, v.13, no.3, p.80-87, 92-95. tables, illus. 6 refs.

Of 16 fungicides tested, 9 were found effective in suppressing mycelial growth of *Ceratocystis paradox*. The fungicides were Agallol 6, Aretan 6, Antimucin (PMA), BSM-11, Fungicide 406, Fermate, Mercide 6, Memmi 0.8 and Tillex. Experiments further showed the fungicides to be equally effective as dipping solutions in providing protection against pineapple disease on cane seedpieces. 5-7 days protection against the disease was obtained at the tested concentrations. No phytotoxic effect on the cane seedlings was noted.

633.15:631.52

Corn — Varieties. Corn — Hybrids.

Teodoro232. **Seedboard recommended varieties.** Gonzales, et al. *Agricultural and Industrial Life*,

June 1969, v.31, no.6, p.10, 12. tables, illus.

The hybrids and varieties recommended are: 1) Philippine Hybrids 1d, 3b, 5, 7, 9 and 11, and UPCA Varieties 1 and 3, for yellow flint corn; 2) Philippine Hybrids 2, 4, and 6, and UPCA Varieties 2 and 4, for white flint corn; and 3) Philippine Hybrid 301, for sweet corn. Presently, improvement in the flints, sweet, glutinous, and popcorn varieties are being conducted.

633.15:631.52:631.55

Corn — Varieties. Corn — Yield.

233. **Grow the recommended corn varieties.** *Agricultural and Industrial Life*, April 1969, v.31, no.4, p.29, 33.

The UPCA Var. 1, 2, 3, and 4 are briefly described. Pointers on how to grow these varieties and obtain the maximum yields are given.

633.15:632.4

Corn — Diseases and pests.

*Sclerospora philippinensis*.

234. **Penetration and infection of *Sclerospora philippinensis* Weston on corn.** S. C. Dalmacio and O. R. Exconde (Dept. of Plant Pathology, College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June 1969, v.53, no.1, p.35-52. table, illus. 14 refs.

Studies were made on the sweet corn variety Phil Hybrid 801. It was found that *Sclerospora philippinensis* penetrated corn leaves through the stomata by either the germ tube or the hypha. Appressorium was usually produced over the stoma. Penetration was followed by intercellular invasion of the mesophyll cells, and the fungus grew downwards through the leaf sheath to the stem and soon became established in the shoot apex. Invasion of the shoot apex caused chlorosis.

235. **Corn grain disinfestation by gamma radiation and insecticide application.** Eugenia C. Manoto (Philippine Atomic Research Center, Dili-man, Quezon City). *Proceedings of the National Science and Technology Week*, July 15-21, 1968 (1969), pt.4, p.559-575. tables, illus. 13 refs.

633.15:632.9

Corn — Diseases and pests — Control.



Studies were conducted on the control of flour beetle (*Tribolium costaneum* Herbst.), rice weevil (*Sitophilus oryzae* L.), Indian meal moth (*Plodia interpunctella* Hbnr.), lesser grain borer (*Rhyssopertha dominica* F.) and saw-toothed grain weevil (*Oryzaephilus surinamensis*). Irradiation with 130 kr of Co-60 was effective in controlling infestation. Malathion was more effective than DDT especially in reducing re-infestation.

Presently, irradiation is considered not economically feasible.

633.17:632.4

Sorghum — Diseases and pests.

236. **Notes on the penetration and infection of *Puccinia purpurea* Cke.** S. C. Dalmacio (Dept. of Plant Pathology, College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June 1969, v.53, no.1, p.53-59. illus. 7 refs.

The pathological histology of sorghum experimentally infected with *Puccinia purpurea* is described. Growth of the germ tubes produced by uredospores was closely appressed to the leaf surface. Penetration was strictly through the stomata. In all cases, an appressorium was formed prior to penetration. Pustules appeared only on the lower surface of the leaf.

633.18:581.035.2

Plants, Effect of light on. Rice — Varieties.

237. **Photoperiodic response of five varieties of rice under seven varying light periods.** Teofilo S. Eugenio and Benito S. Vergara. *Philippine Journal of Plant Industry*, First-Second Quarter 1969 (1970), v.34, nos.1-2, p.71-77; *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.277-289. graphs, tables. 6 refs.

The flowering response of Intan, Raminad str.3, BPI-76-2, Seraup Ketchil 36 str. 482 and BPI-76 was studied. Results showed that as the light period treatments increased from 10 to 24 hrs, an increase in the growth duration was noted. All varieties flowered in the 10- to 12-hr light periods and the 10-hr period gave the shortest duration of growth, while the 8-hr period

produced a slightly longer duration than the 10-hr treatment. BPI-76-2 was found a low photosensitive variety and Intan, medium photosensitive, and are, therefore, classified as seasonal and moderately nonseasonal, respectively. Raminad str. 3, Seraup Ketchil 36 str. 482 and BPI-76 were classified as seasonal varieties.

633.18:631.52

Rice — Varieties.

238. **Wanted — rice varieties with high yields and good market demand.** *IRRI Reproter*. May-June 1969, v.5, no.3, 3p. tables.

A survey in 155 farms in Laguna revealed the following new varieties, namely IR8, IR5, C4-63 and BPI-76 varieties. Of the varieties, C4-63 offers the best combination of yield and price potential.

633.18:631.52:631.55

Rice — Varieties. Rice — Yield.

239. **Performance of rice mutants in yield trials.** Esteban C. Cada (Maligaya Rice Research and Training Center of the Philippines, Bureau of Plant Industry, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.235-250. tables. 15 refs.

Test on indica and japonica mutants obtained from India and Taiwan, respectively, were conducted by the Maligaya Rice Research & Training Center (Manila) in cooperation with the International Atomic Energy Agency (Austria) and the Philippine Atomic Energy Commission (Manila). Of the indica mutants, CP 231 dwarf x Rex and NM-X<sub>1</sub>-131 Mut had markedly low number of tillers, and NM-N<sub>1</sub>-4 Mut and NM-X<sub>1</sub> 131 Mut had highest grain weight. Of the japonica mutants, irradiated Taichung 65 Mut had the highest number of tillers and highest percentage of spikelet fertility and yield.

633.18:631.52/.53

Rice — Varieties. Rice — Seed.

240. **Rice seed production by the farmers.** Esteban C. Cada. *Philippine Journal of Plant Industry*. Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.201-203.



A guide for farmers for the production of rice seed is outlined. The Bureau of Plant Industry (Manila) and the U.P. College of Agriculture in College (Laguna) can furnish data on climatic and cultural requirements of recommended varieties. It is important that the variety selected should suit the particular field and the cultural management practised.

633.18:631.531

Herbicides — Effect on plants.  
Rice seedlings.

241. **Growth and respiration in rice seedlings treated with dimethyl-2, 3, 5, 6-tetrachloroterephthalate.** B. P. Lantican, J. N. Sierra and R. L. Talatala (Dept. of Agricultural Botany, College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June 1969, v.53, no.1, p.60-64. tables, illus.

Dimethyl-2, 3, 5, 6-tetrachloroterephthalate (DCPA) does not inhibit germination of rice seeds but inhibits growth of roots. It stimulates the formation of lateral root at the second-cm region of 4-day-old seedling. Respiration of the treated seedlings is reduced after treatment with DCPA for 24 hrs.

633.18:631.543:631.55

Rice — Planting. Rice — Yield.

242. **Progress report: yield, tillering and plant height of lowland rice as affected by method of planting, variety and fertilizer.** Eпитacio A. Lanuza and Pacifico Joson (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.59-66. tables.

The Masagana, Margate and Ordinary planting methods were studied using Peta and Tjere Mas Seedboard varieties, Milbuen hybrid and Binato. The Masagana system produced the highest mean yield. Of the varieties used, the Seedboard were better yielders than the Binato and Milbuen. The Margate system produced more tillers and taller plants than the Masagana and Ordinary. The application of 12-24-12 fertilizer/ha. and  $(\text{NH}_4)_2\text{SO}_4$  did not significantly improve the yield.

633.18:631.58

Rice — Experiments, Field. Rice — Varieties.

243. **Adaptability of Raminad Str. 3, a tropical rice variety, to cultural conditions in the tropics.** E. S. Vergara, R. Lilis, A. Bueno and R. Donato (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.103-117. graphs, tables.

Results of the experiments showed that Raminad Str. 3 is highly adaptable to different cultural practices. The yield is consistent under different treatments when planted during the rainy season with adequate water supply and control of plant pests.

633.18:631.67(914)

Rice — Irrigation.

244. **Irrigation guide for lowland rice in the Philippines.** Julian Bulanadi (Chief Agricultural Engineer, Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.95-101. tables. 5 refs.

A guide for water management of early and late maturing varieties is outlined. Lowland rice should be transplanted in well puddled and leveled soil. Intermittent irrigation and drainage is suggested, but the last drainage cycle should not be during the booting stage.

633.18:632.9

Pest control. Rice — Diseases and pests.

245. **How to control storage insect pests.** R. M. Labadan. *Philippine Farms & Gardens*, June 1969, v.6, no.6, p.10-11, 40. illus.

The most destructive insect pests infesting stored rough rice are rice weevil, lesser grain borer and Angoumois grain moth, those that infest milled rice are Indian meal moth, rust red flour beetle, corn sap beetle, coffee bean weevil, lesser mealworm and cacao moth. Thorough cleaning of the warehouse and spraying or fumigating with chemicals such as malathion, lindane, methyl bromide and phostoxin are suggested control measures.



633.18:632.951

Rice stem borers.

**246. Effect of different chemicals against the yellow rice stem borer, *Tryporyza incertulas* Wlk.**

Roman S. Abalos (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.15. table.

Results indicated that Endrin, Thiodan, g-BHC, Sevidol and Birlane controlled rice stem borer infestation resulting in significant increases in yield. Birlane and Sevidol were more effective than g-BHC.

633.2:631.55

Grasses — Yield. Grasses — Varieties.

**247. Comparison of growth and yield of fertilized six selected pasture grasses.** Bernardo B. Jasmin (Bureau of Forestry, Manila). [1969] 13p. 9l. graphs, tables. 6 refs. Mimeographed. (Presented at the Annual Symposium on Food Research, National Science Development Board, Manila, July 15-18, 1969).

Of the 6 species studied, guinea-grass (*Panicum maximum* Jacq.), Misamis grass [*Cappillipedium assimile* (Stand.) A. Camus] and Napier grass (*Pennisetum purpureum* Schumach.) were found promising for forage production in the dry season, while samsamong (*Themeda triandra* Forsk.) and Alabang-x (*Dichanthium aristatum* C.E. Hubb.) were found wet season producers. Coastal Bermuda-grass [*Cynodon dactylon* (L.)] was observed to be a good soil stabilizer. Fertilization increased the reproductive functions and growth rate of the species studied.

633.2:631.82

Fertilizers — Effect on grasses.

**248. Response of cogon (*Imperata cylindrica*) and Bagocboc (*Themeda triandra*) grasses to fertilization.** Victor B. Oliveros and Lamberto B. Eoloron. *CMU Journal of Science and Technology*, Jan.-June 1969, v.2, no.1, p.79-85. tables. 5 refs.

Fertilization of both grass species with different combinations of N, P and K applied at the

rate of 45 kg/ha. decreased the number of days at which the specified height for clipping was attained. Fresh forage yield and crude protein content were increased.

633.5:632.3

Manila hemp mosaic virus.

**249. Some viruses transmissible to and causing mosaic or mosaic-like symptoms on abaca (*Musa textillis* Nee).** A. L. Eloja and Lydia Velasco-Magnaye (Bureau of Plant Industry, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.79-91. 4 refs.

Of the 4 mosaic viruses that are transmissible to abaca, abaca mosaic virus (AMV) is the most prevalent and destructive. Grass mosaic (GMV) and batad mosaic viruses (BMV) induce mild symptoms on abaca, while croton mosaic virus (CMV) produces moderately severe symptoms. The host range of AMV, GMV and BMV is only monocot species, while that of CMV includes some dicots. CMV does not infect wild grasses susceptible to the other 3 types.

633.61:631.52

Sugar cane — Breeding.

**250. Sugar cane breeding progress.** *Experiment Station Bulletin* (Victorias Milling Co., Inc., Negros Occidental), Nov.-Dec. 1967, v.14, nos.13-14, p.2-4. illus.

Progress on the first large-scale sugarcane breeding program conducted in 1967 at the Experiment Station in Victorias (Negros Occidental) wherein purely acid-solution crossing technique was used is reported. Both polycross and biparental crossing were used involving 100 parent varieties of which 48 were new varieties from the U.S. Dept. of Agriculture and some were other foreign varieties and new hybrids from the Philippine Sugar Institute. Seed germination was good in most varieties. About 1,000,000 seedlings are expected to be transplanted in the field for selection of promising varieties. 10 regional testing stations in the Victorias Milling district will be established for yield trials of strongly promising varieties.



633.71:595.13:632.94 633.71:631.531

Tobacco — Diseases and pests.

Nematodes — Control.

251. **Nematodes infest tobacco seedlings.** *Philippine Farms & Gardens*, Oct. 1967, v.4, no.10, p.29.

Results of experiments conducted in Tubao (La Union) and Ilagan Central Tobacco Experiment Station (Isabela) showed that the nematode population of tobacco seedbeds was reduced when fumigated with D-D, Edabrom, Dowfume MC-2 (Methylbromide) and Agrene. The seedlings were significantly taller and had little or no root-knot infection.

633.71:631.52(914)

Tobacco — Breeding.

252. **Recent results of tobacco breeding in the Philippines.** Mariano E. Gutierrez and Serapion J. Bayubay (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.137-174. plates, tables. 20 refs.

Botanical description of each of the 42 outstanding newly developed strains is given. The selection included 5 types of tobacco and resistant strains. It was found that there is great variation by using more than 2 varieties in the composition of a very desirable hybrid.

633.73:631.52:631.55

Coffee — Varieties. Coffee — Yield.

253. **Performance of some Arabica coffee selections at the Davao Experiment Station** Petronilo R. Ramos and Isidro M. Gandia (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.1-11. plates, tables. 14 refs.

Of the 13 varieties and strains of Arabica coffee, S-288 was found the highest yielder (8.741 tons/ha.), followed by Bago, Kona, HRS 3-2, Bukidnon, Guam, Costa Rica, Benguet and Bourbon. Maragogipe was the poorest yielder (2.426 tons/ha.) but excelled in height, size of leaves, weight and size of berries. S-288 and S-333 appeared tolerant to infections by coffee rust (*Hemileia vas.*

*tatrix* B. et Br.), but were more susceptible to brown leafspot disease caused by *Cercospora coffeicola* Berk. et Cke.

634.0.5

Forest increment.

254. **Ten-year growth and yield residual forest in Pangil, Laguna.** Martin R. Reyes, Generosa C. Aumentado and Maximino L. Generalao (Bureau of Forestry, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.197-214. tables. 3 refs.

Observation was done in sample plots established in a newly logged-over area within the concession area of the International Hardwood and Veneer Co. of the Philippines. The 85 dipterocarp and 241 non-dipterocarp trees increased their original number to 133 and 266, respectively, within a 10-yr. period. The increase was due to ingrowths in spite of a considerable mortality. The original volume of dipterocarps also increased from 46.12 to 93.16 cu.m/ha. with 28.70 cu.m. mortality. The causes of mortality were breakage due to typhoon, die-backs and injuries during logging operations.

634.0.5:582.825

Forest mensuration. Dipterocarpaceae.

255. **Bole forms and volumes of Dipterocarpaceae in Bislig Forests.** F. O. Chinte. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.303-320. tables. 7 refs.

Correlation by regression analysis was used in the study of forms and volumes of Philippine mahogany, apitong (*Dipterocarpus* sp.) and yakal (*Shorea* sp.). The study revealed that the double-bark thickness at the stump was positively correlated with stump diameter. The tree volume was highly correlated with the product of stump diameter squared and merchantable bole. Stump diameter and stump diameter squared accounted for the total volume variation of 97% in Philippine mahogany, 97% in yakal and 87% in apitong.



634.0.8

Forest products research.

256. **Pilot-stage opportunities for industrial development.** M. R. Monsalud and F. N. Tamolang (Director and Asst. Director, respectively, Forest Products Research Institute, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.283-301. tables. 5 refs.

Researches conducted by the Forest Products Research Institute in College (Laguna) indicated the commercial possibility of manufacturing particle-board, plywood glue, and long fibers for pulp and paper manufacture from local materials.

634.3:631.52

Citrus fruit root stocks.

257. **Study of citrus stock-scion combination suited for Bukidnon.** L. Z. Margate, R. M. Tawatao and J. B. Callejo. *CMU Journal of Science and Technology*, Jan.-June 1969, v.2, no.1, p.105-111. table. 5 refs.

Studies showed that Calamandarin was the best among the stocks studied. It was congenial with Valencia Orange, Szinbat, Batangas Mandarin, Ladu Mandarin, King Mandarin and Calamansi. Other stock-scion combinations that showed promise were: Szinbat on Ladu, King Mandarin and Satsuma Orange on Szinbat, and Valencia Orange on Szinkom.

634.3:631.82

Citrus fruits — Experiments, Field.

258. **A study on the effect of fertilizer (NPK) on citrus at the Guinobatan Experiment Station.** Wenceslao J. Villezar and Elias O. Oyardo (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968 (1969), v.33, nos.1-2, p.49-57. tables, illus. 5 refs.

Complete fertilizer (12-24-12) applied on 12-yr-old bearing Szinkom mandarin (*Citrus raticulata* Blanco) trees at the rates of 3-4 kg/tree promoted a yearly average yield of 42.57-85.51 kg fruits.

634.3:632.3(914)

Citrus fruits — Diseases and pests.

259. **Incidence of citrus virus diseases in the Philippines and experimental evidence of their transmissibility.** Ricardo E. Cortez and Ary A. Salibe (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1967(1969), v.32, nos.3-4, p.229-235. plates. 5 refs.

The major destructive virus diseases observed were tristeza, psorosis, exocortis and xyloporosis. Experiments conducted at the Lipa Experiment Station showed that these diseases are transmissible and can be avoided with the use of virus-free budwood and propagation materials. It was noted that virus diseases reduce the productivity and shorten the life of citrus plants.

634.3:632.3(914)

Citrus fruits — Diseases and pests.

Citrus yellow — Vein virus.

260. **Citrus leaf-mottle-yellows disease in the Philippines and transmission of the causal virus by a psyllid, *Diaphorina citri*.** A. L. Martinez (Senior Plant Pathologist, Bureau of Plant Industry, Lipa City) and J. M. Wallace (Prof. of Plant Pathology, University of California, Riverside, California, U.S.A.). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v.33, nos.1-2, p.119-125. table. 17 refs.

Experimental transmission studies were conducted on Szinkom Mandarin on calamandarin rootstock, sweet orange, Szinkom Mandarin and Valencia orange in various rootstocks. Results showed that the virus causing severe yellowing and leaf mottling was transmitted by the psyllid, *Diaphorina citri*. The virus was found distinct from tristeza.

634.3:632.3(914)

Citrus yellow — Vein virus.

261. ***Diaphorina citri* Kuway, the insect vector for the leaf mottling virus of citrus in the Philippines.** C. S. Celino, A. A. Salibe and R. E. Cortez (Plant Entomologist, FAO Citrus Research Expert and Agronomist, respectively, Bureau of



Plant Industry, Lipa City). *Science Review*, April 1969, v. 10, no. 4, p. 27-29. tables, illus. 3 refs.

Experiments showed that *Diaphorina citri* Kuway successfully transmitted leaf mottling disease in Ladu and Szinkom seedlings. The virus factor transmitted by *D. citri* did not produce any tristeza symptoms on Key lime and, therefore, it may be distinct from the tristeza virus.

634.3:632.358

Citrus fruits — Diseases and pests.

262. **The citrus industry in the Bicol region.** Epitacio A. Lanuza and Alfredo B. Magnaye (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968 (1969), v. 33, nos. 3-4, p. 175-185. plates. 8 refs.

A survey of 50 citrus groves in Albay, Camarines Sur, Camarines Norte and Sorsogon revealed a high incidence of foot-rot, xyloporosis and tristeza. Chlorosis was observed as due to soil deficiency in Zn, Cu and Mg.

634.3:632.9

Citrus fruits — Diseases and pests.

263. **Biological notes and control of citrus leaf miner (*Phyllocnistis citrella* Stainton) affecting citrus seedlings.** Salud F. Barroga (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Second Quarter 1968(1969), v. 33, nos. 1-2, p. 17-36. graphs, plates, tables. 12 refs.

The adult *Phyllocnistis citrella* Stainton is a frail, minute, speckled-white moth, while its larva is small and yellow in color. It enters through a tunnel in the leaf and mines in-between the upper and lower surfaces resulting in the curling of the leaf. The various chemical treatments were found to have no effects on the citrus leaf miner which was partly attributed to parasite interference.

634.616:581.14

Coconut fruit development.

264. **The structural changes during the growth of a coconut fruit.** J. R. Velasco, R. Pamintuan, T. Calzada and E. Lomibao (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July

15-21, 1968(1969), pt. 1, p. 549-560. graphs, table, illus.

Studies showed that the growth of the coconut fruit is accomplished by the activity of basal meristems. Thus, growth is determinate like the growth of leaves in contrast to the indeterminate growth of the stem. In terms of volume, growth in the early stages may be related to hydrostatic pressure and in the later stages, there seems to be correspondence between increase in volume and in dry weight. In terms of fresh weight, growth involves an auto-catalytic process.

Analysis of the endosperms of the nut revealed an average oil content of 38.09% and protein content of 13.56% in the early stages.

634.616:631.82

Fertilizers for coconut.

265. **Preliminary study on the inorganic manuring of coconut at Bago-Oshiro, Davao City.** Celestino Barile (Bureau of Soils, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt. 1, p. 601-607. tables. 4 refs.

Experiments were conducted on 8-yr-old bearing plants of the Laguna variety. Results of the study showed that N and P had no significant effect on the yield of nuts and copra indicating that the soil has sufficient amounts of N and P.  $K_2O$  increased nut weight and also nut yield by 19.42%.

634.616:632.16

Coconut.

266. **A preliminary report on the inducement of nutrient deficiency symptoms in coconuts grown in sand culture.** Bonifacio Azucena, Jr. (Bureau of Soils, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt. 1, p. 561-569. table. 3 refs.

Leaf chlorosis and death of the coconut terminal leaf bud caused by deficiency in N, S, Mg, B and Ca are differentiated. These nutrient deficiencies are reflected not only in leaf discoloration and malformations, but also in growth retardation.



634.772:631.563

Bananas.

267. **Handling bananas.** R. M. Snock, D. B. Mendoza, Jr. and R. M. Abilay. *Philippine Farms & Gardens*, Oct. 1967, v.4, no.10, p.12-17. illus.

Studies were conducted using Lacatan variety to determine the conditions at which green and mature bananas can be safely stored. The following conditions were found suitable: 1) bananas packed in perforated polyethylene bags may be stored at room temperature for 7-10 days; 2) at 57-58°F and 90% R. H. for 1 wk; 3) at controlled atmospheres of 8% CO<sub>2</sub> and 2% O<sub>2</sub>; and at 59-60°F for 3 wks; and 4) at room temperature under vacuum for 2 days.

## HORTICULTURE

635.25:632.954

Onions. Weedicides.

268. **A breakthrough in onion weed control.** *Philippine Farms & Gardens*, Dec. 1967, v.4, no.12, p.8-9. illus.

Experiments demonstrated the effectiveness of Dacthal as a pre-emergence weed killer. The weedicide enhanced the growth and hastened the maturity of onions, and also eliminated manual weeding.

635.6:631.52 633.15:631.52

Crops, New. Crops — Varieties.

269. **New and better crops take to the farm.** P. Ortiz Ramos. *Philippine Farms & Gardens*, Oct. 1967, v.4, no.10, p.8-11, 31. illus.

New and improved varieties of crops developed at the Economic Garden Experiment Station of the Bureau of Plant Industry are discussed. The crops included 2 strains of eggplant, E. G. Long Purple (Long Stout) and E. G. Long Purple (Long Slender), a Seedboard variety of soybean, Biye'oxi 256; BPI Bush sitao No. 2; and white and yellow corn varieties, E. G. Synthetic No. 104-E and E. G. Synthetic No. 107, respectively.

635.64:595.13:632.9

Nematocides. Tomato root knot.

270. **The control of root-knot nematode *Meloidogyne incognita* Chitwood (1949) on tomato. I. Bioassay of concentration gradients of Zinophos.** A. V. Palo and R. H. Calaña (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.195-200. tables. 9 refs.

Experiments showed that Zinophos was effective in the control of the root-knot nematode (*Meloidogyne incognita*) infestation when applied at 16 and 32 p.p.m. in soil with low or high moisture content. Lower concentrations failed to reduce the infestation. 128 p.p.m. Zinophos completely eliminated the parasite.

635.64:595.13:632.9

Nematocides. Tomato root knot.

271. **The control of the root-knot nematode, *Meloidogyne incognita* Chitwood (1949) on tomato. II. Effect of different concentrations of Zinophos on plant height and weight, weight of fruits and root systems and on the nematodes.** A. V. Palo and R. H. Calaña (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.237-239. table. 1 ref.

Experiments showed that Zinophos had no significant effect on tomato plant height. However, significant differences in weight of tops, fruits and root systems were noted at the 5% level of probability between treatments. Plants grown in soil drenched with 32 p.p.m. had few and small gall's, indicating good control of the nematodes. Plants grown in 0-2 p.p.m. treated soil exhibited wilting and deteriorated roots.

635.65:631.5

Castor oil plants.

272. **Castor bean culture and its prospects.** Felix D. Lazo and Maria P. Batoon (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.241-250. tables.



The cultural requirements for growing castor bean plant in the Philippines are discussed. In general, it is recommended to plant the beans between regular planting dates for corn and cotton, usually in May and Sept. The Bureau of Plant Industry (Manila) is conducting introduction and acclimatization trials of various varieties at its experiment stations. Of the 14 varieties acclimatized at the Lamao Experiment Station (Batalan) and other stations, the Ethiopian variety has been found to be very adapted to Philippine conditions. Analysis of the bean gave 50.81-58.67% oil. Presently, beans are not graded since there is yet no regular trade of the crop.

635.65:632.954(043)

Weeds — Control. Soybeans.

273. **A study of the effects of weedicides on soybean.** Abobacar L. Isra. Victoneta Park, Malabon, Rizal, Institute of Graduate Studies and Applied Research, Araneta University Foundation, June 1969. 57p. 10l. tables. 7 refs. (Thesis. M. S. in Agriculture).

Results showed the harmful effects of gramoxone, agroxone and hedonal on the growth and yield of soybean. Handweeding proved to be the best method in controlling weeds in soybean plants.

635.8:634.772:631.55

Mushrooms — Yield. *Volvariella volvacea*.

274. **A study on submerged culture production of banana mushroom [*Volvariella volvacea* (Bull. Ex Fr.) Sing.] mycelium as a source of protein, B-vitamins and food flavor.** Milagros Atacador-Ramos, Macario A. Palo, Deogracias V. Villadolid and Dolores S. Cruz (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.463-468.

*Volvariella volvacea* grown in "volvariella medium" containing 0.4% N in urea and at pH 5 produced the highest mycelial yield. Of the 12 carbohydrates tested, 1-xylose, d-fructose and glucose produced the highest yield of dried mycelia. Also, mycelial yield in volvariella-coconut water medium was twice that obtained in volvariella me-

dium. The protein content (45.3%) approximates closely that of a *Torulopsis utilis*. Analysis also showed that the mycelium of B-vitamins is a rich source of niacin, riboflavin and folic acid.

## ANIMAL HUSBANDRY

636.293:591.11

Blood volume determination. Carabaos.

275. **Blood volume determination in native carabao with the use of chromium-51.** S. C. Bautista, J. D. Alcantara and F. I. S. Medina (Philippine Atomic Energy Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.537-546. graphs, table. 14 refs.

Observations were done on 5 male and 5 female apparently healthy carabaos. The following data were obtained: red cell,  $8041.7 \pm 1001.6$  ml; plasma,  $20,236 \pm 697.4$  ml; blood,  $27,783.8 \pm 1068.1$  ml in males, and in females,  $6473.3 \pm 402.7$ ,  $19,251 \pm 796.6$  and  $25,287 \pm 574.7$  ml, respectively. No correlation study on blood volume and body weight was done. Further study is suggested to establish a standard blood volume value based on age-weight relationship.

636.4:591.16

Swine — Performance records and registration.

276. **The reproductive life of boars in the tropics as to number of services, sperm count and volume.** Mariano D. Yanga (Araneta University Foundation, Victoneta Park, Rizal). *Araneta Journal of Agriculture*, April-June 1969, v.16, no.2, p.89-92. tables. 3 refs.

Of the breeds studied, Berkshire had the highest average of  $1041.6 \pm 47.38$  services for 6 yrs and 5 mo., followed by Duroc with  $898.5 \pm 82.3$  for 5 yrs and 6 mo., Large White with  $680.3 \pm 20.3$  for 4 yrs and 7 mo. and Landrace with  $688.5 \pm 2.5$  for 4 yrs and 6 mo. Large White gave the best sperm concentration/ejaculation, followed by Landrace, Duroc and Berkshire. As to the volume of semen ejaculated, Berkshire ranked first, followed by Landrace, Large White and Duroc.



636.4.085

Swine — Feeding. Feeding and feeding stuffs.

277. **Grow your pigs faster.** Pedro B. Bueno. *Agricultural and Industrial Life*, May 1969, v.31; no.5, p.36.

The high energy ration consisting of 75 parts corn, 10 parts soybean oil meal; 10 parts fish meal and 5 parts ipil-ipil leaf meal promoted the fast weight gain in pigs.

636.5:591.16(914)

Insemination, Artificial — Poultry.

278. **Observations on artificial insemination of chickens in the Philippines.** Mariano D. Yanga, Marcelo V. Giron and Danilo S. Matunan. *Araneta Journal of Agriculture*, April-June 1969, v.16, no.2, p.124-126. table. 4 refs.

Observations were made on 350 ten-mo.-old Single Comb White Leghorn layers and 10 eight-mo.-old roosters. The following data were obtained: fertility,  $89.3 \pm 1.85$ , hatchability,  $81.42 \pm 1.38$ , dead germs,  $5.15 \pm 2.05$ , and dead chicks in shells,  $17.52 \pm 2.08$ .

636.5.084

Poultry — Watering.

279. **Effects of saline water on livestock and poultry.** *Philippine Farmers' Journal*, June 1969, v.11, no.2, p.10-11. table, illus.

Experiments conducted on young chicks, laying hens, turkey poults and duckling showed that 4000 p.p.m. NaCl in drinking water caused watery feces, increased mortality and decreased growth.

636.5.089

Poultry — Diseases and pests.

280. **Field observations on avian pest disease.** Bartolome R. Rudio (Regional Diagnostic Lab., Bureau of Animal Industry, Region I, Dagupan City). *BAI Recorder*, April 1969, p.28-29. 2 refs.

Studies showed that the disease is an acute infection with sudden onset during the hot season. Chickens and birds from 4 mo. to laying age

are most commonly infected. Autopsy of diseased bird revealed pathological lesions in the digestive organs. Advanced cases have been found with necrotic ulcers in the intestines, more frequently at the ileo-caecal junction.

636.5.089

Poultry — Diseases and pests.

281. **The incidence of globular stomachworms in chickens with a note on the prevalent local species.** P. V. Arambulo, III, R. V. Sarmiento, A. C. Borja and V. C. Hernandez (Veterinary Inspection Board, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968 (1969), pt.3, p.125-143. tables. 12 refs.

Of the 37,887 proventriculi of locally-raised imported breeds of chicken examined, 3.35% were found positive for globular stomachworms on post mortem inspection. The highest rate was 58.13%, from Binangonan (Rizal), followed by 8.14%, from Calamba (Laguna), 0.11%, from Sta. Maria and San Miguel (Bulacan), and lowest in Taytay (Rizal), 0.9%. Negative findings were noted from Cavite and Canlubang (Laguna). The prevalent local species recovered was *T. fissispina*.

## FISHERIES

639.32

Fish culture.

282. **Improved techniques in bangos, Chanos chanos (Forsk.) culture.** Pedro A. Acosta, Juan V. Lopez and Modesto Chavez (Philippine Fisheries Commission, Manila). Manila, 1969. 16p. tables. 2 refs. Mimeographed. (Paper presented at the First Annual Symposium on Food Research, National Science and Technology Week, July 14-19, 1969 Manila).

The important features in the improved bangos culture are: 1) growing of the desirable algae through pond fertilization; 2) protection and replenishment of the growth of algae through pest control and supplemental feeding; and 3) manipulation of stock through proper planting and cropping. Experiments conducted at the Dagatdagatan Saltwater Fishery Experiment Station,



Malabon (Rizal) showed that the average weight of harvested baños was higher (4349 g) than the previous harvests.

639.42  
Mussels.

283. **Tahong.** Gregorio L. Escritor. *Philippine Fishing Journal*, Oct. 1967, v.5, no.10, p.13-17, 36, 50.

Results of preliminary studies in Bacoar Bay (Cavite) indicated the possibility of commercial cultivation of "tahong" (*Mytilus smaragdinus*). Improvements in the hanging and stake methods of propagating and cultivating "tahong" are discussed. The re-attaching phase is eliminated by excellent spatting every spawning season. Studies on the life history of "tahong" is suggested.

#### CHEMICAL AND ALLIED INDUSTRIES

66-954:542.61:633.87  
Tannins. Extraction processes.

284. **Tannin extraction from Philippine tannin-bearing materials. II. Barks of white lauan** [*Pentacme contorta* (Vidal) Merr. and Rolfe]. A. E. Manas and L. A. Ynalvez (Forest Products Research Institute, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.209-231. graphs, tables; diagr. 8 refs.

A 6-stage continuous countercurrent method lasting for 1 hr/stage and a bark-to-water ratio of 1:18 at 60°C was found most suitable in the tannin extraction of white lauan bark. An extraction efficiency of 72.65% was obtained: it was noted that the extraction efficiency increased as the bark-to-water ratio was decreased. The presence of waxes caused slight inhibition in the total extraction efficiency of tannin. The extracts obtained in this study were concentrated to 15.96% total solids.

663.1:635.65:582.281  
Soybean — Fermentation. Tempeh.

285. **Two Philippine species of phycomycetes in tempeh production from soybean.** Natividad Diokno-Palo and Macario A. Palo (National Insti-

The preparation of banana wine is briefly discussed. Of the 4 banana varieties, namely, lacatute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.497-502. diagr.

Tempeh fermentation was done with the use of local strains of phycomycetes (*Rhizopus* sp. A-12680 and *Cunninghamella elegans* A-12679) and with a known tempeh mold (*Rhizopus stolonifer* NRRL-1477). Results of the experiment showed that *Rhizopus* sp. A-12680 produced better tempeh than that produced by *C. elegans* A-12679 and *R. stolonifer* NRRL-1477. *Rhizopus* sp. A-12680 fermented soybeans into a cheesy-smelling, nutty-flavored tempeh cake within 24 hrs at room temperature. *C. elegans* A-12679 produced acceptable tempeh only when the incubation period was extended to 48 hrs.

663.3:634.772 634.772:663.3  
Wine and wine making. Bananas.

286. **Banana champagne.** *Philippine Farms & Gardens*, April 1969, v.6, no.4, p.32. illus.

tan, saba, latundan, and boñgolan, boñgolan gave the best wine. Banana wine in general, contains 14-15% alcohol which is slightly higher than other fruit wines.

664.38:634.616  
Coconut proteins.

287. **Coconut protein studies. Studies on the optimum conditions of extraction and precipitation of proteins from coconut meat.** B. C. Sison, E. B. Fernandez, S. A. Capulso, F. S. de la Fuente, A. L. Gonzales, T. R. Claudio and G. C. Mañalac (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.19-30. tables, illus. 8 refs.

Experiments were made on fresh, defatted and undefatted coconut meat dried at 60° and 90°C. Results showed that the optimum pH for extraction was 6-7.4. The optimum pH of precipitation for protein was 3.4-3.5. Defatted coconut meat dried at 60°C gave the highest protein yield.



664.38:634.616

Coconut proteins.

664.641:634.616:641.1

Coconut flour. Coconut proteins.

288. **Darkening of coconut proteins.** D. M. Birosel, C. R. Nuevo and M. P. Santos (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.691-694.

The darkening of coconut milk proteins is similar to the yellowing of dairy proteins. Studies showed that the substance responsible for this phenomenon is cephalin.

664.38:634.616 634.616:637.17

Coconut milk — Protein content.

289. **Separation of the known proteins of coconut milk.** Conchita R. Nuevo, Teresita V. Calzada and Dionisio M. Birosel. *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.625-639. tables, illus. 8 refs.

The principal proteins in coconut milk, namely, casein, albumin and globulin were separated based on the heat and isoelectric point principle. Quantitative and qualitative determinations showed that casein is predominant in the whole coconut milk followed by albumin and globulin. Globulin was found mostly in the coconut water.

664.38:634.616:542.6 664.641:634.616

Coconut proteins. Coconut flour.

290. **Extraction and recovery of coconut protein.** D. R. Strength and T. S. Melo (Dept. of Agricultural Chemistry, College of Agriculture, University of the Philippines, College Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.9-18. tables. 4 refs.

Proteins from coconut flour was successfully extracted and recovered under laboratory conditions. About 80% protein was extracted with 1M NaCl and 0.05-0.5M NaOH, 60-68% of which was recovered. Solubility tests showed that the proteins present were globulins, glutelins, prolamins and albumins.

291. **Biological evaluation of coconut flour and protein isolates.** Josefina M. Gonzales and Cristobal L. Miranda (FNRC, National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.51-62. tables. 18 refs.

The protein efficiency ratio (PER), biological value, and net protein utilization of coconut protein isolates, coconut flour and coconut meal were determined using experimental animals. Statistical analyses showed that there are significant differences between the PER of the water- and oil-soluble fractions, the pH-adjusted and heat-coagulated isolates, and the Franklin Baker and IRC flours. The variations in the results of the values can be attributed to the protein digestibility, amino acid availability and the different methods of preparation. It was indicated that it is possible to produce a high quality coconut protein for human consumption.

664.641:634.616:66.0.4

Coconut flour.

292. **Preparation and the chemical and physical properties of flour from chemically treated dehydrated coconut.** Isabel C. Abdon (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.1-8. graph, tables.

The chemical dip process of preparing dehydrated edible coconut kernels developed in 1965 by the Food Research Laboratory, National Institute of Science and Technology (Manila) is described. Studies showed that the coconut flour obtained from dehydrated edible kernels is slightly reddish-brown, acidic in taste and has a rancid odor. Compared with soybean, peanut and other oilseed flours, the coconut flour has higher crude fiber content (9.8%), but lower protein (24.9%) and fat (2%) values. However, the mineral and vitamin contents are lower, although its iron content is almost 3 times the reported value for peanut flour. The amino acid pattern is fairly good and because of its good storage behavior, coconut



flour is a potential raw material for the preparation of high protein food products.

664.8.037:663.1

Food, Freeze-dried.

293. **Stresses influencing microbial recovery from freeze-dried foods.** Ignacio S. Pablo (Philippine Women's University, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.87-97. tables.

The effects of the composition of the recovery media, incubation temperature and diluent on microbial recovery were studied. In freeze-dried shrimps, it was found that the total aerobic plate count was not influenced by the addition of 0.1% trypticase to the diluent but by the composition of the recovery media and the incubation temperature. A high total aerobic plate was obtained at 20°C. The survival of *Salmonella typhimurium*, *Streptococcus faecalis*, *Staphylococcus aureus* and *Pseudomonas fragi* as observed in some foods and model systems was greatly influenced by the composition of the material freeze-dried and the processing temperature during freeze-drying.

664.87:635.66

Fruit juices, Concentrated. Papayas.

294. **A study of color changes in stored papaya nectar.** Estelita M. Payumo, Leonarda M. Pilac and Pacita L. Maniquis (National Institute of Science and Technology, Manila). *Philippine Journal of Science*, June 1968(1969), v.97, no.2, p.127-138. graphs, table. 15 refs.

Studies showed that room temperature storage, and the presence of O<sub>2</sub> and glutamic acid in the container caused browning of papaya nectar. The type of container and light did not affect the rate of darkening at room temperature. On the other hand, ascorbic acid caused lightening of color at low temperature and bisulfite induced temporary bleaching at both low and room temperature storage. Sugar did not affect the color at low temperature but caused darkening at room temperature.

665.117:634.616:641.1

Coconut meal. Rats — Feeding — Experiments.

295. **Some nutritional and physio-pathological observations in rats fed "chemically treated" coconut meal.** Cristobal L. Miranda, Josefina M. Gonzales, Minda Caedo, Isabel F. del Rosario, Iluminada C. Ortaliza and Loreto Dumada-ug (National Institute of Science and Technology, Manila). *Philippine Journal of Science*, June 1968(1969), v.97, no.2, p.115-125. tables. 12 refs.

The protein quality of coconut meal subjected to a chemical dip treatment was evaluated in terms of growth of weanling rats. The protein efficiency ratio (PER) of the chemically treated coconut meal was 2.12 and that of the untreated meal was 2.2. Casein had a PER of 2.49 which was significantly higher than the coconut meal preparations. The effects of feeding coconut meal, treated or untreated and with or without tryptophan supplementation on some physiological functions and structure of certain tissues of the rats were determined.

665.214(914):641.1

Fish oils. Vitamins — Vitamin A.

296. **Extraction and determination of vitamin A content of liver oils of some Philippine fishes by the direct method.** Studies II. Silvestre V. Bersamin, Lydia G. Salcedo and Gloria Guevara (Philippine Fisheries Commission, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.2, p.477-482. table. 7 refs.

Analysis of liver oils obtained from 7 species of shark and Philippine fish gave vitamin A values of 1573-88,687 IU/g of oil. Of the shark species, Sharpnose and Hammerhead are recommended as good sources of vitamin oil and Black-finned and Atlantic mackerel for industrial purposes.

665.353.6

Coconut oil.

297. **The acquired brown color of coconut oil.** D. M. Birosel, A. L. Gonzales, T. V. Calzada and S. Soriano (National Institute of Science and Technology, Manila). *Proceedings of the National*



*Science and Technology Week*, July 15-21, 1968 (1969), pt.1, p.651-674. tables. 12 refs.

The brown color of coconut oil prepared by rendering coconut milk and of the commercial copra oil expressed from dried meat is caused by the effect of heat on reducing sugars, proteins and other amino compounds of coconut. It was found that water white oil may be obtained at low temperature in both the dry and wet processes of preparing oil.

665.353.6

Coconut oil.

**298. High quality water white coconut oil of the physico-mechanical process.** D. M. Birosel (National Institute of Science and Technology, Manila). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.641-649. table. 8 refs.

The physico-mechanical processed oil is superior in quality compared with the commercial copra oil and the fresh coconut oil (Cochin type). The oil has mild fresh coconut odor, low free fatty acid, no peroxide value and is stable, water white in color and is edible.

665.5:632.951:595.77 595.77:632.951

Oil as insecticide.

**299. Not only for gas lamps: petroleum oil as insecticide against mosquitoes.** *Agricultural and Industrial Life*, May 1969, v.31, no.5, p.4. illus.

The advantages of petroleum oil as an insecticide are: 1) its high larvicidal activity; 2) low toxicity; and 3) it is "resistant-proof".

668.44:633.94

Resinous products.

**300. Rosin size from indigenous materials — its preparation and quality evaluation.** E. C. Salud, P. V. Bawagan, E. C. Amio, S. M. Fanega and L. A. Ynalvez (Forest Products Research Institute, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.1, p.135-452. graph, tables, illus. 10 refs.

The preparation of rosin size from Benguet pine oleoresin and almaciga resin are briefly des-

cribed. Based on the standard paper-sizing test, rosin size obtained from Benguet pine showed comparable qualities with imported commercial size (Pine P), while that obtained from almaciga resin showed inferior qualities. However, mixtures of almaciga rosin size (M-1) and Benguet pine rosin size, compared favorably with imported rosin size. The water absorptivity (g/sq.m.) of sized handsheets evidently increased as the proportion of almaciga rosin size increased.

## VARIOUS INDUSTRIES

674:582.825:544.81

Wood — Chemical treatments.

**301. Chemical separation of Philippine Dipterocarpus timbers.** Lucio L. Quimbo (College of Forestry, University of the Philippines, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.255-292. tables. 21 refs.

The aqueous and "secondary" alcohol, and "tertiary" alkaline extracts of 54 wood samples of *Dipterocarpus* were tested with different chemical reagents. Results showed that it is possible to separate *D. gracilis*, *D. grandiflorus*, *D. kerrii*, *D. orbicularis*, *D. warburgii* and *D. hasseltii* by means of a combination of the colors of the resultant mixtures and the resulting precipitates.

674.03.04:625.142(914)

Wood preservation.

**302. Preliminary studies of creosote treatment of some Philippine woods suitable for use as railway ties by pressure methods.** F. R. Siriban and J. B. Seguerra, Jr. *Wood Preservation Report* (Forest Products Research Institute, College, Laguna), March-April 1969, v.4, no.2, p.1-6. table. 2 refs.

Studies were made on the treatability of 5 species by the pressure method using 70:30 creosote/bunker oil mixture at 200 — 1000 psi and at 150 — 200°F. The species experimented on for use as railway ties were: yakal (*Shorea astylosa* Foxw.), narig (*Vatica mangachapoi* Blco.), dalingdangan (*Hopea foxworthyi* Elm.), manggachapui (*Hopea acuminata* Merr.), and dangula (*Teijsman*).



*niodendron ahernianum* Merr.). Except for *da-ngula* and *yakal*, all species could be adequately impregnated with the preservative oil even at 200 psi provided the ties have enough sapwood to sufficiently absorb 10 lb/cu. ft. under Philippine conditions.

674.04:582.825

Lumber — Drying.

303. **Air drying of some dipterocarp lumber.** Ernesto B. Ordinario. *Wood Preservation Report* (Forest Products Research Institute, College, Laguna), May-June 1969, v.4, no.3, p.1-5. tables. 1 ref.

Tabulated data on air-drying of 18 dipterocarp species is presented. Studies showed that the drying rates of wood varied with the period of exposure, regardless of species and initial moisture content.

674.7:620.17(914)

Wood — Testing. Poles.

304. **Strength classification of Philippine wood poles.** Agustin N. Ramos, Jr. and J. O. Siopongco (Chief Forest Products Technologist and Asst. Chief Forest Products Technologist, respectively, Timber Physics and Engineering Div., Forest Products Research Institute, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.4, p.401-426. tables. 19 refs.

The potentialities of 21 Philippine pole species were evaluated based on their mechanical and related properties as obtained from tests of small clear wood specimens to augment the depleting supply of the commonly used apitong poles. Species having comparable working stresses were grouped into 15 various strength classifications to provide a rational basis for designing wood poles for any combination of design loads and pole lengths. The design loads used are 9 different breaking-load classes recommended by the American Standard Association.

The method used in selecting promising species and the major factors considered in deriving values of working stresses for wood poles are discussed.

676.1.03

Paper making materials.

305. **Fiber morphology: its role in pulp and paper research.** Isidro T. Zamuco, Rodrigo R. Valbuena, Conchita K. Lindayen and Leonardo Roberto (Forest Products Research Institute, University of the Philippines, College, Laguna). *Proceedings of the National Science and Technology Week*, July 15-21, 1968(1969), pt.3, p.345-386. tables. 22 refs.

A total of 716 wood species and other fibrous plants of foreign and local origins were studied at the Forest Products Research Institute in College (Laguna). Based on their morphological characteristics as well as on the Muhlsteph and Runket classifications systems, 343 medium and long-fibered species (35 exotic and 308 endemic), represented by 84 families, were found promising for pulp and paper making.

676.17

Paper making materials.

*Miscanthus floridulus*.

306. **New source of pulp and paper.** Isidro Zamuco and Enrique Amio. *Philippine Farms & Gardens*, Dec. 1967, v.4, no.12, p.16, 30.

Recent studies conducted by the Forest Products Research Institute in College (Laguna) revealed that bigau or "talahib" [*Miscanthus floridulus* (Labill.) Warb.] is a promising source of pulp and paper. Its pulp yield and strength properties were found comparable with those of the hardwood species. Pulp brightness obtained was 84.8% G.E.

677.16/.161.017

Fibers — Testing.

307. **Procedure for determining TEX (fineness) of abaca and other leaf fibers.** Amado C. Garcia and Pergentino T. Franco (Plant Research Coordinator and Fiber Research Technician, respectively, Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, Third-Fourth Quarter 1968(1969), v.33, nos.3-4, p.213-218. table. 8 refs.



A method for assessing the fineness of abaca fiber, maguey, sisal, pineapple and related species is discussed. The unit TEX was adopted to conform with the international system of determining fineness of the fiber.

677.161.08:677.06

Textile fabrics. Manila hemp.

308. **Bonded fiber fabrics from abaca wastes.** Estela Llenado-Zamora and Ramona F. Gayagoy (Graduate School, University of Santo Tomas, Manila). *Science Review*, May 1969, v.10, no.5, p. 21-27. 27 refs.

The waste products from the chemical and mechanical processing of abaca fibers can be utilized as raw material for the production of non-woven fabrics. Based on previous experiments, the best method for web formation was the water dispersion or wet-laying process. Of the binders tried, polyvinyl acetate was the most suitable when applied by spraying and in concentrations of 1-2%. The properties of the resulting non-woven fabrics were largely dependent on the original characteristics of the resin used. These bonded fiber fabrics have a high degree of softness, absorbency, flexibility, porosity and other characteristics similar to textile materials.



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NOTE: This list contains the publications from which pertinent articles are abstracted in this issue.

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Acta Medica Philippina  
Agricultural and Industrial Life  
Agriculture at Los Baños  
Araneta Journal of Agriculture  
BAI Recorder  
Better Poultry and Livestock  
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Bureau of Forestry  
    Occasional Paper  
Bureau of Mines  
    Report of Investigation  
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MD Journal  
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    Technical Bulletin  
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Philippine Architecture, Engineering &  
    Construction Record

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Philippine Farmers' Journal  
Philippine Farms & Gardens  
Philippine Fishing Journal  
Philippine Journal of Ophthalmology and  
    Otolaryngology  
Philippine Journal of Pediatrics  
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Philippine Journal of Veterinary Medicine  
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    Technology Week  
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    Research Institute, College, Laguna)

### B. OTHER PUBLICATIONS

#### Papers:

1st Annual Symposium on Food Research,  
National Science and Technology Week, July  
14-19, 1969

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Araneta University Foundation  
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College of Veterinary Medicine